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ABSTRACT

This bibliography includes science materials which related to curricula produced by the Australian Science Education Project (ASEP). ASEP has developed 41 separate science units for junior secondary students, 6 service booklets, and a comprehensive handbook for teachers called "A Guide to ASEP." The purpose of the bibliography is twofold: to help libraries determine reference needs resulting from the introduction of ASEP materials into schools, and to provide teachers who are using ASEP materials with a comprehensive reference list so that they can identify their own library needs. It is also hoped that such a bibliography will be useful to other teachers who are developing their own junior science materials. The entries in the bibliography are organized according to the subject content of the 41 ASEP science units and include science books, sourcebooks, journal articles, and non-ASEP curriculum materials. (Author/MLH)

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The ASEP bibliography

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Introduction

The Australian Science Education Project produced 41 separate science units for junior secondary students (including annotated teacher editions of each unit), 6 service booklets, and a comprehensive handbook for teachers called *A Guide to ASEP*. The Guide outlines the content of each unit and discusses the philosophy and aims of ASEP, ways of using the materials, problems of assessment and evaluation, education theory, tests for readability, and the development and trials of the materials.

All ASEP materials, including associated audio-visuals and special equipment, are sold and distributed by the Stores Branch of the Education Department of Victoria, 23 Gipps Street, Collingwood, Victoria 3066 (telephone: 41 5681). The *ASEP Catalogue* (available from Stores Branch) lists all ASEP materials, prices, and ordering procedures.

The ASEP Bibliography

The purpose of the Bibliography is two-fold:

- to help libraries determine reference needs resulting from the introduction of ASEP materials into schools; and
- to provide teachers who are using ASEP materials with a comprehensive reference list so that they can plan their own library needs.

It is also hoped that such a bibliography will be useful to other teachers who are developing their own junior science materials.

The Bibliography is organised by unit titles, and lists all references given in both student and teacher editions. Descriptive comments are given at the end of most entries.

The Australian Science Education Project was funded jointly by the Commonwealth and all the States of Australia to design instructional science materials for junior secondary students. The task was completed in March 1974 when all materials were submitted to the Government Printer.

The Curriculum Development Centre, a national centre for curriculum development set up in June, 1973, is responsible for the ongoing needs of ASEP during the introduction of the materials into Australian classrooms. For further information regarding ASEP materials, contact the ASEP Information Officer at the Melbourne office of the CDC:

Curriculum Development Centre
450 St. Kilda Road
Melbourne, Victoria 3004
Tel: 267 2988

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UNIT 101 CELLS, THE UNITS OF LIFE

For Teachers

Australian Academy of Science. *Biological Science: The Web of Life.* Canberra, 1973.

Chapter 17 in particular is well worth looking at.
[Also suggested for Units 107, 112, 203, 306, and 312.]

Gerard, R. W. *Unresting Cells.* Harper and Row, New York, 1949.

Treats cell structure and function.

Healey, P. *Microscopes and Microscopic Life.* Hamlyn, London, 1969.

An introduction to the microscope and its use. Components and mechanics of the light microscope dealt with in detail. Instruments (including the electron microscope) and methods of microscopy used in routine laboratory procedures and research described in simple language.

Klopper, L. G. *The Cells of Life.* Science Research Associates, Chicago, 1964.

Could serve as a source of ideas for further development of the topic.

Morholt, E., Brandwein, P. F., and Joseph, A. *A Sourcebook for the Biological Sciences.* Harcourt, Brace and World, New York, 1966, pp. 89-154.

An extremely useful source for an enormous range of biological techniques. Section on cells and tissues is clear and concise.

Nason, A. and Goldstein, P. *Biology: Introduction to Life.* Addison Wesley, New York, 1969, pp. 154-203.

Comprehensive but relatively simple treatment of cells.

Simpson, G. G. and Beck, W. S. *Life: an Introduction to Biology.* 2nd ed. Harcourt, Brace and World, New York, 1965, pp. 64-104.

Full treatment of the cell as a unit of life.

Swanson, C. P. *The Cell.* 3rd ed. Prentice-Hall, Englewood Cliffs, New Jersey, 1969.

Deals at a fairly advanced level with structure, function and behaviour of normal cells.

Scientific American

These papers provide excellent illustrations of cells, their ultra-structure and organelles:

Fox, C. F. 'The Structure of Cell Membranes'. In *Scientific American,* vol. 226, no. 2, February 1972, pp. 31-38.

Scientific American. *The Living Cell; Readings from Scientific American.* Freeman, San Francisco, 1965.

Scientific American. *From Cell to Organism; Readings from Scientific American.* Freeman, San Francisco, 1967.

Scientific American. vol. 205, September 1961.

An issue devoted entirely to cells.

For Students

Johnson, G. and Eleifield, M. *Hunting with a Microscope.* Sentinel, New York, 1963.

Simply written beginner's guide to exploring the micro-world of plants and animals.

Meylan, B. A. and Butterfield, B. G. *Three-dimensional Structure of Wood.* Reed, Wellington, 1972.

Troughton, J. and Donaldson, L. A. *Probing Plant Structure.* Reed, Wellington, 1972.

The last two books comprise captioned scanning electron micrographs. This technique of photography shows three-dimensionality extremely well. Both books are highly recommended.

UNIT 102 EARTH'S CHANGING FACE

For Teachers

Bloom, A. L. *The Surface of the Earth.* Prentice-Hall, Englewood Cliffs, New Jersey, 1969.

A relatively simple account of geomorphology. Contains many up-to-date ideas. A paperback.

Boyer, R. E. *Field Guide to Rock Weathering.* Houghton Mifflin, Boston, 1971.

Clarke, E. de C., Prider, R. T. and Teichert, C. *Elementary Practical Geology.* 4th ed. University of Western Australia Press, Nedlands, W.A. 1968.

Descriptions of rock, mineral and fossil specimens.

Freeman, T. *Field Guide to Layered Rocks.* Houghton Mifflin, Boston, 1971.

Heller, R. L. *Geology and Earth Sciences Sourcebook for Elementary and Secondary Schools.* Holt, Rinehart and Winston, New York, 1962.

Contains many ideas for practical work.

Holmes, A. *Principles of Physical Geology.* Nelson, London, 1965.

A sound general reference on many aspects of geology.

Larousse Encyclopedia of the Earth. Paul Hamlyn, London, 1967.

A good general reference.
[Also suggested for Units 203 and 303.]

Leopold, L. B., Wolman, M. G. and Miller, J. P. *Fluvial Processes in Geomorphology.* Freeman, San Francisco, 1964.

An advanced book on geomorphology.

Schultz, G. *Glaciers and the Ice Age.* Holt, Rinehart and Winston, New York, 1963.

A relatively simple account of the ice ages and their effect on early man. A paperback.

Strahler, A. N. *The Earth Sciences.* Harper and Row, New York, 1968.

[Also suggested for Units 116, 213, 303, 309, and 310.]

Twidale, C. R. *Geomorphology with Special Reference to Australia.* Nelson, Melbourne, 1968.

For Students

Beckway, G. *Stream Table Laboratory Manual.* Hubbard Scientific, Northbrook, Illinois, 1967.

A well-illustrated book of stream table investigations.

Child, J. *Australian Rocks and Minerals.* Periwinkle, Melbourne, 1970.

A simple and well-illustrated outline of rocks and minerals.
[Also suggested for Units 109 and 302.]

Macdonald Junior Reference Library. *The Earth (vol. 20).* Macdonald Educational, London, 1969.

Macdonald Junior Reference Library. *Rocks and Minerals (vol. 25).* Macdonald Educational, London, 1969.

Serventy, V. *Landforms of Australia.* Angus & Robertson, Sydney, 1967.

A well-illustrated and interesting account of the landforms of Australia.
[Also suggested for Unit 309.]

Time-Life International. *Land and Wild Life of Australasia.* New York, 1963-65 (Life Nature Library).

Many photographs of landforms.

Twidale, C. R. and Foale, M. R. *Landforms Illustrated.* Nelson, Australia, 1969.

A well-illustrated account of the formation and appearance of Australian landforms. Script too difficult for young students.
[Also suggested for Unit 309.]

Zim, H., [and others] *Rocks and Minerals.* Golden Press, New York, 1957.

A well-illustrated and easy-to-read book on rocks, minerals and gems. Contains a section on sedimentary rocks.
[Also suggested for Units 109, 302, 303, and 307.]

UNIT 103 ELECTRIC CIRCUITS

General References

Bender, A. *Let's Explore with the Electron.* Sentinel, New York, 1960.

Elementary Science Study. *Teacher's Guide for Batteries and Bulbs.* McGraw-Hill, New York, 1967.

Gordon, S. *A Pageant of Scientists, Book 2: Thomas Alva Edison—His Life, Work and Experiments.* Blackwell, Oxford, 1966.

Graf, R. F. *Practical Electricity and Magnestism; 101 Exciting Electrical Experiments Using Common Household Articles.* Butterworth, London, 1967.

Guthridge, S. *Thomas Edison: Boy Inventor.* Bobs-Merrill, Indianapolis, 1959.

James, A. *Simple Science Experiments.* Schofield and Sims, Huddersfield, 1964.

Nuffield Junior Science Project. *Apparatus: a Source Book of Information and Ideas.* Collins, London, 1967.

UNESCO. *Source Book for Science Teaching.* Wakefield, Yorkshire, 1970.

UNIT 104 ENERGY AND CHANGE

For Teachers

Harrison, G. R. *The Conquest of Energy.* Morrow, New York, 1968.

Good general reading on the interaction between man and energy.
[Also suggested for Unit 310.]

Intermediate Science Curriculum Study. *Probing the Natural World/1.* Silver Burdett, Morristown, New Jersey, 1970.

A structured series of activities to develop the energy concept.
[Also suggested for Unit 105.]

Junior Secondary Science Project. *Work and Energy.* Cheshire, Melbourne, 1974.

Contains a number of good investigations.

Nuffield Foundation. *Combined Science: Teachers Guide II.* Longman/Penguin, London, 1970.

Scientific American. vol. 224, no. 3, September 1971.

Complete issue on the theme 'Energy and Power'.

For Students

Some entries in the following list are specific references for the options section of *Energy and Change.* This is indicated at the end of an entry. All other entries complement the whole unit.

Bate, C. L. *Daily Life Science, Book 3.* Ginn, London, 1963.

Good diagrams and photos in Chapter 3.

Blough, G. O. [and others] *Science is Discovering/5.* Scott Foresman, Chicago, 1965 (The Basic Science Program, vol. 5).

Contains a simple treatment of the energy concept.

Brandwein, P. F. [and others] *Concepts in Science/Green.* 2nd ed. Harcourt, Brace and World, New York, 1970.

Excellent treatment of energy.

General Motors. *The Story of Power.* Detroit, 1956.

An interesting account of man's utilization of available energy sources.

Hogben, L. *The Wonderful World of Energy.* Macdonald, London, 1968.

A well-illustrated book tracing man's gradual control over energy.
[Also suggested for Unit 310.]

Langdon-Davies, J. *James Watt and Steam Power.* Jackdaw, London, 1965.

A collection of documents, charts, etc. For use with Option 3.

Macdonald Illustrated Library. *Technology: Man Remakes His World,* vol. 5, chapter 3. Macdonald, London, 1963.

Macdonald Junior Reference Library. *Fuel and Power.* Macdonald Educational, London, 1968.

For use with Option 3.

Mullin, V. L. *Chemistry Experiments for Children.* Dover, New York, 1968.

Chapter on photography useful for Option 2.

Time-Life International. *Energy.* New York, 1965 (Life Science Library).

Reading level is high, but illustrations and photos excellent.

Wilson, N. and Smith, R. *If I Were Energy.* Hutchinson, 1972.
Written for younger children.

UNIT 105 FORCES

General References

Accelerated Instruction Methods Corporation. *General Science Programmed Learning Laboratory/2.* Macmillan, New York, 1963-64.

Bainbridge, J. W., Stockdale, R. W. and Wastnedge, E. R. *Junior Science Source Book.* Collins, London, 1970.

Basford, L. *Engineering Technology.* Sampson Low, Marston, London, 1966 (Foundations of Science Library).

Basford, L. *The Restlessness of Matter.* Sampson Low, Marston, London, 1966 (Foundations of Science Library).

Basford, L. *The Science of Movement.* Sampson Low, Marston, London, 1966 (Foundations of Science Library).

Blanc, S. S. [and others] *Modern Science; Man, Matter and Energy.* Holt, Rinehart and Winston, New York, 1967.

Booth, V. H. *Physical Science; a Study of Matter and Energy.* Macmillan, New York, 1967.

Bragg, L. *Ideas and Discoveries in Physics.* Longman, London, 1970.

de Vaucouleurs, G. *The Discovery of the Universe.* Faber, London, 1957. Out of print.

Gammage, J. W. *Explorations in Natural Science.* Southern Cross International, Sydney, 1965.

Gamow, G. *Gravity.* Heinemann, London, 1962 (Science Study Series, no. 17).

Intermediate Science Curriculum Study. *Probing the Natural World/1.* Silver Burdett, Morristown, New Jersey, 1970.
[Also suggested for Unit 104.]

Lodge, O. *Pioneers of Science and the Development of Their Scientific Theories.* Dover, New York, 1961.

Macdonald Junior Reference Library. *Famous Scientists.* Macdonald Educational, London, 1970.

Nuffield Science Teaching Project. *Combined Science.* Trial ed. Nuffield Foundation, London [n.d.]

Pannekoek, A. A. *History of Astronomy.* Allen and Unwin, London, 1961.

Science 5/13 Project. *Structures and Forces.* Macdonald Educational, London, 1973.

Sullivan, N. *Pioneers in Astronomy.* Harrap, London, 1964. Out of print.

Tricker, R. A. and B. J. *The Science of Movement.* Mills and Boon, London, 1967.
[Also suggested for Unit 207.]

Toulmin, S. and Goodfield, J. *The Fabric of the Heavens.* Hutchinson, London, 1961.

UNIT 106 MADE TO MEASURE

For Teachers

African Primary Science Program. *Measuring Time.* Trial ed. Education Development Center, Newton, Massachusetts, 1969.

Hogben, L. *Mathematics.* Macdonald, London, 1969. (A new edition of *Man Must Measure.*)

Jardine, J. *Physics is Fun/3.* Heinemann, London, 1966-68, chapter 1.

Physical Science Study Committee. *Physics.* 2nd ed., Heath, Boston, 1968, chapters 1 and 2.

For Students

Goudsmit, Samuel and Claiborne, Robert. *Time.* Time-Life International, New York, 1966 (Life Science Library).

Junior Secondary Science Project. *How Hot Is It?* Teachers Guide. Cheshire, Melbourne, 1968.

Shows in some detail how a thermometer is based on a change in some property of a substance.

Macdonald Junior Reference Library. *Time and Timepieces*, vol. 56. Macdonald Educational, London, 1970.

Ward, F. A. B. *Timekeepers.* Her Majesty's Stationery Office, London, 1963 (Science Museum illustrated booklet).

H.M.S.O. publications are available through the Australian Government Publishing Service bookshops in the capital cities.

UNIT 107 MALES AND FEMALES

General References

Australian Academy of Science. *Biological Science: The Web of Life.* Canberra, 1973, chapter 33.
[Also suggested for Units 101, 112, 203, 306, and 312.]

Beck, L. F. *Human Growth.* New school ed. Harcourt, Brace and World, New York, 1969.

Good illustrations, well written and easy to read

Boria, M. C. *The Miracle of Sex.* Patrician Publications, Sydney. [n.d.]

The intention of this book is to make clear, in simple terms and pictures, the nature of the miracle of sex.

Demarest, R. J. and Sciarra, J. J. *Conception, Birth and Contraception.* Hodder and Stoughton, London, 1969.

An excellent visual presentation.

Family Planning Association. *Learning to Live with Sex.* London, 1972.

A handbook of sex education for teenagers.

Flanagan, G. L. *The First Nine Months of Life.* Heinemann, London, 1963.

Photos and descriptions of the embryonic stages in the development of humans.

Harris, Alan. *Questions about Sex.* Hutchinson Educational, London, 1970.

Highly recommended.

Head, J. J. *How Human Life Begins.* Murray, London, 1970.

A fully illustrated account of human reproduction.

Hutchen, K. C. *Your Health.* 3rd ed. Longman, London, 1963.

Contains an interesting section on reproduction.

Kind, A. *Programmed Sex Information.* Longman, London, 1968-69.

Volumes: *Babies and Families*; *You Begin Life*; *You Grow Up*; *Sex and Your Responsibility*; *Contraception.*

These five texts form a programmed learning approach to human reproduction; sociological aspects are covered.

Marshall Cavendish Learning System. *Birth of a Baby. From Baby to Child. From Child to Adolescent. Heredity. Family and Society.* Marshall Cavendish Books, London, 1969.

Colourfully illustrated accounts covering all aspects mentioned in the titles.

Nuffield Science Teaching Project. *Biology.* Nuffield Foundation, London, 1966-67, Text 1 (Chapter 6) and Text 5 (Chapter 7).

Describes fertilization and the stages of development of the human embryo and foetus.

Nuffield Science Teaching Project. *Combined Science.* Longman, London, 1970 (Activities Booklet 3: 'How living things begin').

Describes sexual organs of humans, mating of gerbils, and development of a foetus.

Sentilhes, N. *Sex Education for Young People.* Paul Hamlyn, London, 1971.

Concise guide which discusses some of the moral issues.

For information on chickens and incubation

Flanagan, G. L. *Window into an Egg.* Scott, New York, 1969.

A very good reference on egg incubation.

Nuffield Science Teaching Project. *Biology.* Nuffield Foundation, London, 1966-67, Text 1 (chapter 5).

Describes fertilization and development of a hen's egg.

For information on multiple births

Australian Academy of Science. *Biological Science: The Web of Life.* Canberra, 1973, p. 648.

[Also suggested for Units 101, 112, 203, 306, and 312.]

Beck, L. F. *Human Growth.* New school ed. Harcourt, Brace and World, New York, 1969, p. 75-78.

Head, J. J. *How Human Life Begins.* Murray, London, 1970, p. 42-43.

MacKean, D. G. *Introduction to Biology.* 2nd ed. Murray, London, 1963, p. 114.

Villee, C. A. *Biology.* 4th ed. Saunders, Philadelphia, 1962, p. 447.

For information on how animals care for their young, and their courtship behaviour

Chance, M. 'Mother Monkeys and their Infants'. In *Science Journal,* vol. 7, no. 1, January 1971, pp. 35-40.

A good reference on parental care for the better readers.

Frauca, H. *Animal Behaviour.* Lansdowne, Melbourne, 1971. (Periwinkle Colour Series).

Specificially Australian content.
[Also suggested for Units 210 and 302.]

Selsam, M. E. *The Courtship of Animals.* William Morrow, New York, 1964.

[Also suggested for Unit 210.]

Time-Life International. *The Mammals* and *The Primates.* New York, 1965 (Life Nature Library).

[*The Mammals* also suggested for Units 108 and 302.]

For information on Australian animals

Brazenor, C. W. *The Mammals of Victoria and the Dental Characteristics of Monotremes and Australian Marsupials.* Brown, Prior, Anderson, Melbourne, 1950, pp. 11-18.

Davey, K. *Australian Marsupials.* Landsdowne, Melbourne, 1970.

[Also suggested for Unit 302.]

Frauca, H. *Bush Dwellers of Australia.* Rigby, Adelaide, 1967, pp. 14-15.

Ride, W. D. L. *Native Mammals of Australia.* Oxford University Press, Melbourne, 1970, chapter 12.

[Also suggested for Unit 302.]

Sharland, M. *Tasmanian Wildlife.* Melbourne University Press, 1962, chapter 5.

Troughton, E. *Furred Animals of Australia.* 7th ed. Angus and Robertson, Melbourne, 1962, pp. 1-12.

[Also suggested for Units 108 and 302.]

UNIT 108 MICE AND MEN

For Teachers

Dulbecco, R. 'The Induction of Cancer by Viruses'. In *Scientific American,* vol. 216, no. 4, April 1967, pp. 28-37.

Also in *Readings in the Life Sciences,* Freeman, San Francisco, 1969 (Scientific American Resource Library, offprint no. 1969).

Elementary Science Study. *Teacher's Guide for Animal Activity; Activity Wheels.* McGraw-Hill, St. Louis, 1969.

Fertig, D. and Edmonds, V. W. 'The Physiology of the House Mouse'. In *Scientific American,* vol. 221, no. 4, October 1969, pp. 103-10.

Great Britain, Department of Education and Science. *Keeping Animals in the Schools; a Handbook for Teachers.* Her Majesty's Stationery Office, London. [n.d.]

Langer, W. L. 'The Black Death'. In Hardin, G. *39 Steps in Biology.* Freeman, San Francisco, 1968, pp. 256-61.

Newsome, A. E. 'Of Mice and Men'. *In Rural Research in CSIRO,* no. 73, September 1971, pp. 28-32.

A summary of Dr. A. E. Newsome's research into the causes of mouse plagues in Australian wheatlands.

Perley, H. *Enjoy Your Gerbils, Rats and Mice.* Pet Library, New York. [n.d.]

Pratt, G. K. *How to Care for Living Things in the Classroom.* National Science Teachers Association, 1965.

Pringle, L. (ed.) *Discovering Nature Indoors.* Washington, Natural History Press, New York, 1970.

Skinner, B. F. 'How to Teach Animals'. In *Scientific American,* vol. 185, no. 6, December 1951, pp. 26-29.

Also in *Readings is Psychology.* Freeman, San Francisco, 1969 (Scientific Resource Library, offprint no. 423).

Trethewie, E. R. 'Effect of Combustion Temperature on Epithelial Damage by Tobacco Smoke'. In *Scientific American,* vol. 5, no. 1, June 1968, pp. 9-16.

Mice were used in this research.

For Students

Boorer, M. *Mammals of The World.* Hamlyn, Sydney, 1970.

Morris, D. *The Mammals; a Guide to the Living Species.* Hodder and Stoughton, London, 1965, pp. 184-236.

Ride, W. D. L. *A Guide to Native Mammals of Australia.* Oxford University Press, Melbourne, 1969.

Stanbury, P. *Looking at Mammals.* Angus and Robertson, Sydney, 1970.

Stanek, V. J. *Pictorial Encyclopaedia of the Animal Kingdom.* Hamlyn, London, 1962.

Time-Life International. *Animal Behaviour.* New York, 1968 (Young Readers Library).

[Also suggested for Unit 114.]

Time-Life International. *The Mammals.* New York, 1965 (Life Nature Library).

[Also suggested for Units 107 and 302.]

Troughton, E. *Furred Animals of Australia.* 7th ed. Angus and Robertson, Sydney, 1962.

[Also suggested for Units 107 and 302.]

UNIT 109 MINERALS AND CRYSTALS

General References

Australia. Department of National Development. *Atlas of Australian Resources.* 2nd series. Canberra, 1966.

A series of maps on Australian resources, including the location of mineral deposits and the mineral industry.

Dana, E. S. and Hurlbut, C. S. *Manual of Mineralogy.* Wiley, New York, 1959.

A crystallography approach to mineralogy. Contains extensive lists of mineral properties.

Desautels, P. E. *The Mineral Kingdom.* Hamlyn, Sydney, 1969.

A good general introduction to the mineral kingdom. Contains magnificent colour photos of minerals.

Hurst, M. M. *Crystals.* Longman, London, 1969.

Contains an excellent section on crystal uses.

Kirkaldy, J. F. *Minerals and Rocks in Colour.* Blandford, London, 1963.

Covers identification of rocks and minerals, their mode of formation and their economic uses. Very good colour photos.

Pearl, R. M. *An Introduction to the Mineral Kingdom.* Blandford, London, 1966.

Covers minerals and rocks, ores and metals, gems, crystals and meteorites, as well as artificial minerals—from their origin and world-wide occurrence to their current industrial uses. Explains collection, recognition, identification and classification of rocks and minerals.

Rutley, F. *Elements of Mineralogy.* Allen and Unwin, London, 1963.

A good general background book on mineralogy.

Techter, D. *Stereogram Book of Rocks, Minerals and Gems.* Hubbard, Northbrook, Illinois, 1970.

A book of colour photos of minerals, rocks and gems for stereoscopic viewing.

For Students

Some entries in the following list are specific references for the options section of *Minerals and Crystals.* This is indicated at the end of an entry. All other entries complement the whole unit.

Alexander, W. and Street, A. *Metals in the Service of Man.* Penguin, Harmondsworth, Middlesex, 1958.

For use with Option 1.
[Also suggested for Unit 307.]

Australia. Department of National Development. *Atlas of Australian Resources.* 2nd series. Canberra, 1966.

Berry, J. *Exploring Crystals.* Collier-Macmillan, London, 1969.

Borner, R. *Minerals, Rocks and Gemstones.* Oliver and Boyd, Edinburgh, 1967.

Bowser, C. J., Gates, R. M. and Archbald, D. *Quick Key Guide to Rocks and Minerals.* Doubleday, New York, 1968.

Contains a punch-card identification system. For use with Option 5.

Buchester, K. J. *The Australian Gemhunter's Guide.* Ure Smith, Sydney, 1971.

Child, J. *Australian Rocks and Minerals.* Lansdowne, Melbourne, 1968 (Periwinkle Colour Series).

[Also suggested for Units 102 and 302.]

Coghill, I. *Australia's Mineral Wealth.* Sorrett, Melbourne, 1971.

For use with Option 1.
[Also suggested for Unit 307.]

Holden, A. and Singer, P. *Crystals and Crystal Growing.* Heinemann, London, 1966 (The Science Study Series).

An excellent book but reading level is very high.

James, B. *Collecting Australian Gemstones.* Murray, Sydney, 1967.

Landsberg, H. H. *Natural Resources for U.S. Growth: A Look Ahead to the Year 2000.* Johns Hopkins, Baltimore, 1965.

For use with Option 1.
[Also suggested for Unit 307.]

Maddox, J. *The Doomsday Syndrome.* Macmillan, London, 1972.

Meadows, D. L. [and others] *The Limits to Growth.* Earth Island, London, 1972.

[Also suggested for Units 209, 307, and 308.]

Minerals and Their Characteristics. A pamphlet compiled by the The Mining and Geological Museum, Department of Mines, Sydney.

Nuffield Science Teaching Project. *Growing Crystals.* London, 1965 (A Chemistry Background Book).

Perry, N. R. *Australian Gemstones in Colour.* Reed, Sydney, 1970.

Raggatt, H. G. *Mountains of Ore.* Lansdowne, Melbourne, 1968.

For use with Option 1.
[Also suggested for Unit 307.]

Smith, G. H. (ed.) *Conservation of Natural Resources.* Wiley, Sydney, 1966.

For use with Option 1.

Talent, J. A. *Minerals, Rocks and Gems; a Handbook for Australia.* Jacaranda, Melbourne, 1970.

An excellent book on Australian rocks, minerals and gems.
[Also suggested for Unit 307.]

Zim, H. S. [and others] *Rocks and Minerals.* Golden Press, New York, 1957.

[Also suggested for Units 102, 109, 302, 303 and 307.]

UNIT 110 PIGMENTS AND ACIDITY

General References

Adlam, G. H. J. (ed.) *The Science Masters' Book (Series 3, Part 2).* Murray, London, 1963.

Berger, K. C. *Introductory Soils.* Macmillan, New York, 1965.

Bradford, D. *Acidity and Alkalinity.* Heinemann, London, 1968.

Duncan, M. *Spin Your Own Wool and Dye It and Weave It.* Reed, Wellington, 1968.

Huntress, E. H. 'The Chemistry of the Red and Blue Pigments in Flowers and Fruits'. In *Journal of Chemical Education,* January 1929, p. 52.

King, J. *Dyes and Dyeing.* Griffin and George, London, 1970.

Maile, A. *Tie and Dye as a Present Day Craft.* Taplinger, New York, 1969.

Mairet, E. *Vegetable Dyes.* Faber, London. [n.d.]

Nightingale, E. (ed.) *The Science Masters' Book (Series 4, Part 2).* Murray, London, 1961.

Nuffield Foundation. Chemistry Background Book(s). Longmans, London, 1965.

Nuffield Foundation. *Nuffield Science Teaching Project—Chemistry.* Longmans, London, 1966-68.

Raupach, M. and Tucker, B. M. 'The Field Determination of Soil Reaction'. In *Journal of the Australian Institute of Agricultural Science,* vol. 25, no. 2, June 1959, pp. 129-33.

Russell, E. J. *The World of the Soil.* Fontana, London, 1961.

[Also suggested for Unit 116.]

Sime, I. *Plant Dyes.* Ginn, London, 1969.

Stegner, R. W. *Plant Pigments with Laboratory Activities.* Murray, London, 1969.

UNIT 111 PLACES FOR PEOPLE

General References

Ardrey, T. *African Genesis.* Fontana, London, 1967.

More able students should find Chapters 2, 3 and 4 especially interesting.

Domebook 2. Pacific Domes, Bolinas, California, 1971.

Some extremely interesting applied geometry. Recommended for further activities.

Freeland, J. M. *Architecture in Australia.* Penguin, Melbourne, 1972.

A well illustrated account of architecture in Australia from 1788 to 1967. Reading is difficult, but students could get a lot of information by looking at pictures and reading captions.

Learning about Australia: Featuring Colonial Homes and Methods of Transportation. Hamlyn, Sydney, 1971.

Well illustrated. Includes cut-away homes showing the interiors and furnishings. Highly recommended for students.

Life Educational Reprint No. 19 *The Struggle to be an Individual* and No. 20 *Cities for Tomorrow.*

Illustrated in colour. Reading level suitable for more able students.

Lorenz, K. *King Solomon's Ring.* Methuen, London, 1964.

Interesting account of research into animal behaviour.
[Also suggested for Unit 210.]

Macdonald Junior Reference Library. *Architecture. Glass. Metals. Timber.* Macdonald Educational, London, 1968-1970.

[*Metals* also suggested for Unit 307; *Timber* also suggested for Unit 112.]

Navarra, J. G. *Our Noisy World.* Doubleday, Garden City, New York, 1969.

Especially Chapters 8 and 9.

Rodda, M. *Noise and Society.* Oliver and Boyd, London, 1967.

Especially Chapters 8 and 9.

Stretton, H. *Ideas for Australian Cities.* Stretton, Adelaide, 1970.

Good background reading for teachers. Canberra, Adelaide, Melbourne and Sydney are dealt with in some detail.

Unstead, R. J. and Henderson, W. F. *Homes in Australia.* A. & C. Black, London, 1969.

Well written and profusely illustrated. Highly recommended.

The Way Things Are: The Lifescape Series Pack 1: Introduction. Architectural Press, London. [n.d.]

Consists of 24 leaflets and accompanying discussion cards. Although dealing mainly with English conditions, it could be a good basis for discussion.

Wilby, C. B. and Salter, R. D. *Basic Building Science.* Arnold, London, 1966.

A good reference book, especially Chapters 6-9.

UNIT 112 PLANTS

For Teachers

Bold, H. C. *The Plant Kingdom.* 2nd ed. Prentice-Hall, Englewood Cliffs, New Jersey, 1964.

Excellent background information on plants.

Caulton, E. 'An Ecological Approach to Biology'. In *Journal of Biological Education.* vol. 4, no. 1, March 1970.

Hale, M. E. *The Biology of Lichens.* Edward Arnold, London, 1967.

Pages 158-63 discusses economic uses and applications of lichens.

Hall, N., Johnston, R. D. and Chippendale, G. M. *Forest Trees of Australia.* 3rd ed. Australian Government Publishing Service, Canberra, 1970.

Hammersley, A. E. and Perry, G. A. *Approaches to Environmental Studies.* Blandford, London, 1968.

Intended as a guide to environmental studies for teachers with students in the 9-13 age group. Emphasis is on the practical discovery of information within the local environment.

[Also suggested for Unit 205.]

Hawker, L. E. *Fungi.* Hutchinson, London, 1966.

Detailed account of the classification and morphology of fungi.

Huhnke, W. 'Modern Mushroom Farming'. In *Science Journal,* vol. 6, no. 5, May 1970, pages 62-66.

McLaren, M. and Herrin, B. D. 'The Uses of Fungi in the Teaching of Ecological Succession'. In *Science Teacher,* vol. 36, no. 5, May 1969.

Gives instructions for obtaining a succession of fungi—using faeces from a herbivorous animal.

Morris, I. *An Introduction to the Algae.* Hutchinson, London, 1967.

A detailed account of the classification and morphology of algae.

Nuffield Junior Science Project. *Animals and Plants: a Source-book of Information and Ideas: Part Two.* [Texts] 2nd ed. Collins, London, 1967.

Gives instructions for growing plants indoors, and contains notes on selected groups of plants.

Smith, D. C. 'Lichens'. In *Science Journal*, vol. 6, no. 3, March 1970.

Detailed ideas about the symbiotic relationship between algae and fungi.

For Students

Anderson, R. H. *Trees of New South Wales*. 4th ed. New South Wales Government Printer, Sydney, 1968.

Includes exotic as well as native species and has keys for identification. A very useful library reference for schools in temperate south-east Australia.

Australian Academy of Science. *Biological Science: The Web of Life*. Canberra, 1967.

Chapter 5 briefly describes the major plant groups. Numerous illustrations.
[Also suggested for Units 101, 107, 203, 306, and 312.]

Australian Conservation Foundation. *Outdoor Studies Code*. Melbourne, 1972.

A pamphlet for field studies.
[Also suggested for Unit 203.]

Black, J. M. *Flora of South Australia*. Parts I-IV. 2nd ed. South Australian Government Printer, Adelaide, 1943-57.

Valuable for schools in western areas of New South Wales and Victoria, as well as South Australia. Accurate and well produced.

Blough, G. O. *Discovering Plants*. World's Work, Kingswood, Surrey, 1967. Out of print.

Brooks, A. E. *Tree Wonders of Australia*. Heinemann, Melbourne, 1969.

Brown, A. and Hall, N. *Growing Trees on Australian Farms*. Department of National Development, Canberra, 1968.

A very comprehensive account.

Child, J. *Wildflowers of the Sydney Region*. Lansdowne, Melbourne, 1968.

A well-illustrated aid to identifying native plants.

Dakin, W. J. *Australian Seashores*. 4th ed. Angus and Robertson, Sydney, 1960.

A useful reference for identification of seaweeds and other living organisms found on the seashore.
[Also suggested for Unit 309.]

Ducker, S. C. and King, R. J. 'Marine Algae of the Victorian Coast'. In *Victorian Year Book*, no. 84, 1970.

Short, interesting account on the properties of marine algae. Suitable for all States.

Francis, W. D. *Australian Rainforest Trees*. 3rd ed. Australian Government Publishing Service, Canberra, 1970.

Standard reference on Australian rainforests, with 260 full-page photos.

Galbraith, J. *Fruits*. Longman, Melbourne, 1966 (Australian Native Series).

Discusses what a fruit is, and kinds of fruit. Written especially for young students.

Haworth, F. M. *The Sea-Shore.* University of London Press, 1963.

Contains photos and diagrams of common seaweeds and instructions on a method of making a seaweed collection.
[Also suggested for Unit 309.]

Haworth, F. M. *Toadstools and Lichens.* University of London Press, 1961.

Illustrated with brief notes and diagrams of various toadstools and lichens.

Holliday, I. and Hill, R. *Field Guide to Australian Trees.* Rigby, Adelaide, 1969.

Useful for identification of trees during field study.

Hosel, J. *Wildflowers of South-East Australia.* Lansdowne, Melbourne, 1969.

Provides an introduction to some of the most common flowering plants found in south-eastern Australia. Explains the concept of the 'plant kingdom' and the meaning of a 'flowering plant'. Well illustrated.

Macdonald Junior Reference Library. *Trees* (vol. 24). *Farming* (vol. 27). *Wildflowers* (vol. 31). *Plants without Flowers* (vol. 44). *Timber* (vol. 63). Macdonald Educational, London, 1970.

[*Timber* also suggested for Unit 111.]

McWhirter, N. and R. *The Guinness Book of Records.* Guinness, London, 1972.

Oakman, H. *Some Trees of Australia.* 2nd ed. Jacaranda, Brisbane, 1966.

Useful for identification of familiar Australian trees.

Perry, G. A. *The Investigator's Book of Plant Life.* Blandford, London, 1965.

Explores the importance of plant life to humans.

Stephenson, W. *Places for Living: an Environmental Approach to Ecology.* Angus and Robertson, Sydney, 1970.

A general account of habitats.
[Also suggested for Unit 205.]

Time-Life International. *The Plants.* New York, 1963-65 (Life Nature Library).

Well-illustrated; for more able students.
[Also suggested for Units 114 and 310.]

White, D. C. and Elliott, C. S. *Man, the Earth and Tommorrow.* Cassell, Melbourne, 1969.

About conservation generally.
[Also suggested for Unit 205.]

Wight, F. G. and Thorpe, T. H. *Plant Physiology.* Edward Arnold, London, 1968.

A simple treatment of plant physiology. Pages 64-69 deal with aspects of plant growth.

Wight, F. G. *Plant Classification: Biology Unit Four.* Edward Arnold, London, 1970 (Unit Studies in Science).

Photos, diagrams, and descriptions of each group of plants.

Willis, J. H. *Victorian Toadstools and Mushrooms.* 3rd ed. Field Naturalists Club of Victoria, Melbourne, 1963.

Suitable for all States; one of the few books in this field.

Willis, J. H. [and others] *Flowers and Plants of Victoria in Colour.* Reed, Melbourne, 1968.

Beautiful illustrations of Victorian wildflowers.

UNIT 113 SAFETY IN SCIENCE

General References

Bate, C. L. *Daily Life Science, Book 2.* Ginn, London, 1964.

Barnard, J. D. and Lavatelli, C. B. *Science, Testing Ideas (vol. 2).* Macmillan Science Series, London, 1970.

Barnard, J. D. [and others] *Science, A Way to Solve Problems (vol. 3).* Macmillan Science Series, London, 1966.

Buckley, K. R. [and others] *Science Makes Sense (Book 1).* Heinemann Educational, Auckland, 1968.

Brent, R. *The Golden Book of Chemistry Experiments.* Golden Press, New York, 1968.

Dale, L. G. *Doing Science (Book 1).* Cheshire, Melbourne, 1964.

Dyke, J. E. *Experimental Science, Book 1.* Longmans Green, London, 1968.

Gray, C. H. *Laboratory Handbook of Toxic Agents.* Royal Institute of Chemistry, London, 1968.

Heading, K. E. G. [and others] *Science for Secondary Schools,* Book 1. Rigby, Melbourne, 1969.

Intermediate Science Curriculum Study. *Probing the Natural World (vol. 2A).* Silver Burdett, Morristown, New Jersey, 1970.

Nuffield Combined Science. *Teachers Guide 1, Sections 1-5.* Longman/Penguin, London, 1970.

[Also suggested for Unit 114.]

Sax, N. I. *Dangerous Properties of Industrial Chemicals.* 2nd ed. Reinhold, New York, 1963.

Steers, N. V. *Safety in the Chemicals Laboratory.* Reprinted from the Journal of Chemical Education, Easton, Pennsylvannia, 1967.

Pamphlets

Australia. Commonwealth Advisory Committee on Standards for Science Facilities in Independent Schools. *The Design of Science Rooms.* Canberra. [n.d.]

Australia. Defence Standards Laboratories. *Safety.* [n.p., n.d.]

Australia. Department of Education and Science. *Safety.* Canberra, 1968.

British Drug Houses. *Laboratory First Aid* (wall chart). BDH Laboratory Chemicals Division, Dorset, Poole, England.

British Drug Houses. *How to Deal with Spillages of Hazardous Chemicals* (wall chart). BDH Laboratory Chemicals Division, Dorset, Poole, England.

Florida. State Department of Education. *A Guide—Safety in the Science Laboratory.* Tallahassee, Florida, 1968 (Bulletin 74, 1968).

Imperial Chemical Industries of Australia and New Zealand. *Safety in the Laboratory.* [n.p., n.d.]

National Safety Council of Australia. (The State branches publish information sheets about poison, poisonous plants, chemicals, electricity, etc.)

New South Wales. University School of Chemistry. *Safety Folders.* 1962-63.

Royal Australian Chemical Institute. *Safety.* [n.p., n.d.]

Scotland. Education Department. *Safety in Science Laboratories.* Her Majesty's Stationery Office, London, 1970.

Standards Association of Australia. (Booklets defining minimum standards for items such as safety spectacles, respiratory devices, fire extinguishers and also on safe practices in industry are available.)

UNIT 114 TUNING IN WITH THE SENSES

For Teachers

Aronoff, J. [and others] *Psychology Today: An Introduction.* CRM Books, Delmar, California, 1970.

Carthy, J. D. *The World of Feeling.* Phoenix, London, 1959 (Progress of Science Series).

Day, R. H. *Human Perception.* Wiley, Sydney, 1969.

Droscher, V. B. *The Magic of the Senses.* Allen, London, 1969.

Gregory, R. L. *Eye and Brain.* World University Library, London, 1966.
[Also suggested for Unit 206.]

Ittelson, W. H. *The Ames Demonstration in Perception.* Hefner, New York, 1968.

Lowenstein, C. *The Senses.* Penguin, Harmondsworth, Middlesex, 1966. Out of print.

Milne, L. and M. *The Senses of Animals and Men.* Penguin, Harmondsworth, Middlesex, 1965. Out of print.

Nuffield Biology. *III The Maintenance of Life. IV Living Things in Action. V The Perpetuation of Life.* Longman, London, 1966.

Nuffield Combined Science. *Teachers Guide I and II.* Longman, London, 1971.
[Also suggested for Unit 113.]

Nuffield Physics. *Guides to Experiments V.* Longman, London, 1966.

Nuffield Secondary Science. Fox, D. *Theme 3; Biology of Man.*

Nuffield Secondary Science. Howard, E. *Theme 5; Extension of Sense Perception.* Longman, London, 1971.

Vernon, M. D. *The Psychology of Perception.* Penguin, Harmondsworth, Middlesex, 1962.

Waterhouse, F. L. 'Alternative or Choice Chambers for the Study of Arthropod Behaviour'. In *The School Science Review,* vol. XLVII, no. 163, June 1966, pp. 726-36.

Weintraub, D. J. and Walber, E. L. *Perception.* Brooks/Cole Publishing, Belmont, California, 1966.

For Students

Carthy, J. D. *Animal Behaviour.* Aldus Books, London, 1965.
[Also suggested for Unit 210.]

Fogg, G. E. *The Growth of Plants.* Penguin, Harmondsworth, Middlesex, 1966.

Lockley, R. M. *Animal Navigation.* Pan, London, 1967.

Marshall Cavendish Learning System. *Man and Medicine.* Marshall Cavendish Books, London, 1969.

Discusses the body structure and sensation.

Prince, J. H. *Animals in the Night.* Angus and Robertson, Sydney, 1968. Out of print.

Sudd, J. H. *An Introduction to the Behaviour of Ants.* Edward Arnold, London, 1967.

Time-Life International. *The Insects. Animal Behaviour. The Birds. The Fishes. The Plants.* New York, 1963-65 (Life Nature Library).

[*Animal Behaviour* also suggested for Unit 108. *The Plants* also suggested for Units 112 and 310.]

Time-Life International. *The Body. Light and Vision. Sound and Hearing.* New York, 1966-68 (Life Science Library).

[*Light and Vision* also suggested for Unit 205.]

UNIT 115 WATER

For Teachers

Australia. Senate Select Committee on Water Pollution. *Water Pollution in Australia.* Commonwealth Government Printing Office, Canberra, 1970.

[Also suggested for Units 205 and 309.]

Dunk, W. P. [and others] *Water in Australia.* Cheshire, Melbourne, 1967.

A short, well-illustrated, easy-to-read book on Australia's water resources.

Fisher, D. G. *Water and Man; Selected Case Studies.* Rigby, Adelaide, 1970.

Selected case studies of water management problems, including some Australian problems.

Leopold, L. [and others] *Water.* Time-Life International, New York, 1968 (Life Science Library).

Excellent general reference on all aspects of water.

Young, B. *Apparatus: A Source Book of Information and Ideas.* Nuffield Junior Science, London, 1967.

For Students

Leete, F. *Life, Wealth and Power; the Story of Water in Australia.* Revised ed. Coca-Cola Export Corporation, Sydney, 1971.

Excellent booklet on Australia's water resources; discusses the importance of water, sources of water in Australia, factors affecting Australia's water resources, etc.

Leopold, L. [and others] *Water.* Time-Life International, New York, 1968 (Life Science Library).

A well-illustrated, easy-to-read book covering all aspects of water in the environment.

Morris, W. V. *Water.* The Queen's Printer for the Department of Energy, Mines

and Resources, Inland Water Branch, Ottawa, Canada, 1969.

Contains chapters on water and life, the world's water, fresh water, etc.

Morrow, M. *Water (Books 1 and 2).* Longman, Sydney, 1967.

Well-illustrated booklets containing simple investigations, many of which students can do at home.

Nuffield Foundation. *Water.* Longman, London, 1968 (Chemistry Background Book).

Contains sections on the properties of water, water supply, the water cycle, and the uses of water. Highly recommended.

United States. Department of the Interior, Federal Water Pollution Control Administration. *A Primer on Waste Water Treatment.* Government Printing Office, Washington, 1969.

Available only by writing to the U.S. Government Printing Office in Washington, D.C.

UNIT 116 WORLD OF THE SOIL

For Teachers

Brade-Birks, S. G. *Good Soil.* Everyman, London, 1969 (Teach Yourself Books).

Clark, Kenneth. *Practical Pottery and Ceramics.* Studio Vista, London, 1968.

Jackson, R. M. and Raw, F. *Life in the Soil.* Arnold, London, 1966.

Kevan, D. K. *Soil Animals.* Witherby, London, 1962.

Kevan, D. K. *Soil Zoology.* Butterworth, London, 1955. Out of print.

Leeper, G. W. *Introduction to Soil Science.* 4th ed. Melbourne University Press, 1967.

Russell, E. J. *The World of the Soil.* Fontana, London, 1970.

[Also suggested for Unit 110.]

Schaller, F. *Soil Animals.* University of Michigan Press, Ann Arbor, Michigan, 1968.

Soil Conservation Authority, Victoria. *Know Your Soils.* [n.d.]

Consists of teacher notes and 12 experiments on separate leaflets, all contained in a folder. Available from Audio-Visual Education Centre, 234 Queensberry Street, Carlton, Victoria 3053.

For Students

Elementary Science Study. *Earthworms.* Newton, Massachusetts, 1969.

Ellison, W. D. 'Erosion by Raindrop'. In *Scientific American,* vol. 179, no. 5, November 1948, pp. 40-45.

Also in Scientific American Resource Library, *Readings in the Earth Sciences,* W. H. Freeman, San Francisco, vol. 1, offprint 817, 1969.

This article can also be obtained as a separate offprint for about 25c.

Macdonald Junior Reference Library. *Ceramics.* Macdonald Educational, London, 1969.

Mandahl-Barth, G. *Woodland Life.* Blandford, London, 1966.

Contains more than 500 coloured illustrations of animals; useful for general identification.

Morgan, M. *Soil Erosion and Conservation.* Collins, London, 1969.

Nelson, Glenn C. *Ceramics—a Potter's Handbook.* Holt, Rinehart and Winston, New York, 1971.

Nuffield Foundation. *Fertilisers and Farm Chemicals.* Longman, London, 1968 (Chemistry Background Books).

Nuffield Foundation. *Keys to Small Organisms in Soil, Litter and Water Troughs.* Longman, London, 1966.

[Also suggested for Unit 302.]

Perry, G. S. *The Investigator's Book of Soils.* Blandford, London, 1965 (Rural Studies Series, Book 1).

Simon, S. *A Handful of Soil.* Hawthorn Books, New York, 1970.

Soil Conservation Authority. *Fundamentals of Soil Conservation.* Melbourne, 1971.

Stace, H. C. T. [and others] *A Handbook of Australian Soils.* Retlim, Glenside, South Australia, 1968.

Contains a separate soil map of Australia prepared in the Cartographic Office, CSIRO, Division of Soils, Adelaide, by D. A. Wright, 1968. The soil map shows the variety of soils, each printed in a different colour.
[Also suggested for Unit 302.]

Strahler, A. N. *The Earth Sciences.* Harper & Rowe, Tokyo, 1968.

[Also suggested for Units 102, 213, 303, 309, and 310.]

Swann, M. R. *About the Soil.* Soil Conservation Authority, Melbourne, 1970.

Winterburn, Mollie. *Hand-built Pottery.* Mills & Boon, London, 1966. Out of print.

Pamphlets

Several pamphlets are available from the Soil Conservation Authority, 378 Cotham Road, Kew, Victoria 3101. Among these are the following comics: *Plants—How They Improve Our Environment; The Story of Land; The Wonders of Water.*

UNIT 154 MAKING PHOTOS

General References

Eastman Kodak. *How to Make Good Pictures.* Rochester, New York, 1967.

Griffin and George Ltd. *Photography; S74-720.* London, 1970 (Griffin Project No. 14).

Hoffer, V. *Making Photograms.* Focal Press, London, 1969.

Kodak Ltd. *Developing, Printing, Enlarging in Black-and-White and Colour.* London, 1971.

Morris, A. *The Science of Photography.* Blackie, London, 1971.

Macdonald Junior Reference Library. *Photography (vol. 42).* Macdonald Educational, London, 1969.

Thomas, D. B. *Cameras, Photographs and Accessories.* Her Majesty's Stationery Office, London, 1966.

Pamphlets

Teachers can obtain single copies of the following pamphlets free of charge by writing to the Education Markets Division of the Kodak branch in the capital cities.

Basic Still Photography

Composition (AC-11)

Designing a Photo Course (AT-56)

How to Develop and Print Black-and-White Films (AJ-3)

An Outline for Teaching Photography (Tutor's Guide) (AT-105)

Contains suggestions for a series of lessons on photography. Designed to be used with the Eastman Kodak publication *How to Make Good Pictures.*

Photographic Equipment for Group Instruction and Activities (AT-45)

A Ten-Minute Introduction to Photography (AC-13)

Tips for Processing Kodak 126 Black-and-White Films (AJ-4)

The Wonderful World of Photography (L-100)

Kodak branches also have a series of packaged lectures on photography which they will lend free of charge to schools. These deal with such aspects of photography as using a camera, composition, developing, enlarging and colour photography. Kodak publication T-1, *Catalogue of Packaged Lectures,* gives details of the lectures available and how to order them.

UNIT 201 ATOMS

For Teachers

Introductory Physical Science. 2nd ed. Prentice-Hall, Englewood Cliffs, New Jersey, 1972.

Chapter 8 contains a black box activity similar to that in Option 5 of *Atoms.*

Intermediate Science Curriculum Study. *Probing the Natural World/2.* Silver Burdett, Morristown, New Jersey, 1971.

See in particular Chapters 4, 5 and 6.

Latham, R. (translated) *Lucretius—The Nature of the Universe.* Penguin, Harmondsworth, Middlesex, 1961.

This fascinating book contains many of the ideas of modern atomic theory.

For Students

Butler, S. T. and Raymond, R. *Frontiers of Science—vol. 2,* 'Atoms, Energy and Einstein'. Pulsar Press, Sydney, 1971.

Useful sections on quarks, atomic energy and controlled fusion.

Crowther, J. G. *Ernest Rutherford.* Methuen Educational, London, 1972 (Methuen's Brief Lives).

The complete story of Rutherford's life.

Duckworth, H. E. *Little Men in the Unseen World.* Macmillan, London, 1963.

A well-illustrated description of man's quest to understand the atom.

Foundations of Science Library. *The Cosmic Power.* Sampson Low, Marston, London, 1966 (edited material from *Understanding Science*).

Gamow, G. 'Mr Tomkins Explores the Atom'. In *Mr Tomkins in Paperback.* Cambridge University Press, Cambridge, 1961.

Mr Tomkins attends his father-in-law's lectures on atomic structure, but becomes bored and falls asleep. In one of his dreams he is an electron. Very interesting, but the reading level may be too high.

Jacobson, W. J. [and others] *The Atom—Theories and Models in Science.* American Book Co., New York, 1969.

Introductory section on models is very good.

Kom, J. and Van Houten, N. *Atoms—the Smallest Particles and the Energy They Contain.* Golden Press, New York, 1959 (Golden Library of Knowledge). Out of print.

Easy to read.

The Nuffield Foundation. *Inside the Atom and Dalton and the Atomic Theory.* Longman/Penguin, London, 1967 (Chemistry Background Books).

Seaborg, G. T. and Valens, E. G. *Elements of the Universe.* Methuen, London, 1959. Out of print.

Contains personal accounts of the discovery of new elements.

Time-Life International. *Matter.* New York, 1965 (Life Science Library).

Contains colour photos of all the elements.
[Also suggested for Unit 212.]

Wilson, N. and Smith, R. *If I Were an Atom. If I Met a Molecule. If I Were an Electron. If I Were Radioactive.* Hutchinson, Richmond, Victoria, 1970.

Written for younger children, but could be very useful.

UNIT 202 CHARGE!

For Teachers

Charman, N. 'The Enigma of Ball Lightning'. In *New Scientist,* vol. 56, no. 824, 14 December 1972.

Henry, P. S. H. 'Static in Industry'. In *Physics Education,* vol. 3, 1968.

Orville, R. E. 'Lightning Photography'. In *The Physics Teacher,* vol. 9, no. 6, September 1971.

Standards Association of Australia. *The Control of Undesirable Static Electricity.* Known as the SAA Static Electricity Code, Sydney, 1970.

Unman, M. A. 'Everything You Wanted to Know about Lightning but Were Afraid to Ask'. In *Saturday Review,* 13 May, 1972.

For Students

Nuffield Foundation. *The Discovery of the Electric Current.* Longman, London, 1965 (Chemistry Background Books).

Ronan, C. (comp.) *Faraday and Electricity.* Jackdaw, London, no. S5.

Sutcliffe, A. and A. P. N. *Stories from Science: 2.* Cambridge University Press, London, 1962, chapters 33, 34, 35.

Provides interesting historical background to science.

UNIT 203 DIGGING UP EVIDENCE

General References

Australian Academy of Science. *Biological Science: The Web of Life.* Canberra, 1967, chapter 13.

[Also suggested for Units 101, 107, 112, 306, and 312.]

Australian Conservation Foundation. *Outdoor Studies Code.* Melbourne, 1972.

[Also suggested for Unit 112.]

Biological Science Curriculum Study. *Present Problems about the Past.* Heath, Boston, 1962-65, pamphlet no. 6.

Begins with an account of the work of palaeontologists and then discusses the discovery of fossils and the evolution of the horse.

Berry, W. B. N. *Growth of a Prehistoric Time Scale.* Freeman, San Francisco, 1968.

The first chapter is about the need for a time scale. For high ability students only.

Cartner, W. C. *Fun with Palaeontology.* Kaye and Ward, London, 1970.

Looks closely at many different kinds of fossils, including those of dinosaurs. Discusses how much can be learned about life in the past.

Earth Science Curriculum Project. *Field Guide to Fossils.* Houghton Mifflin, Boston, 1971, pamphlet no. 4.

Looks at collecting, preparing, and identifying fossils; and shows how fossils provide evidence for ancient environments and geography.

Eicher, D. L. *Geologic Time.* Prentice-Hall, Englewood Cliffs, New Jersey, 1968.

Very detailed account of this subject; suitable only for teachers and high ability students.

Kirkaldy, J. F. *Fossils in Colour.* Blandford, London, 1967.

Sixty-five pages of coloured photos of fossils found in England.

Larousse Encyclopedia of the Earth. Hamlyn, London, 1967.

Contains a major section entitled The Past, which has many fine illustrations. [Also suggested for Units 102 and 303.]

Laseron, C. *Ancient Australia: the Story of its Past Geography and Life.* Angus and Robertson, Sydney, 1969.

A detailed account; many photos of Australian fossils.

Matthews, W. H. *Wonders of Fossils.* World's Work, London, 1968.

Highly recommended reference text for students. Easy to read with many illustrations.

Mincham, H. *Prehistoric Australia.* Golden Press, Sydney, 1971.

A survey of Australia's fossil history.

Palmer, E. L. *Fossils.* Heath, San Francisco, 1956.

Suitable for students with a definite academic interest in fossils. Many drawings of fossils.

Rhodes, F. H. T., Zim, H. S. and Shaffer, P. R. *Fossils: a Guide to Prehistoric Life.* Golden Press, New York. 1962.

A small book containing more than 400 colour illustrations. Reconstructions of prehistoric environments are very good.

Seaborg, G. T. 'The Expanding Role of the Atom in the Humanities'. In *The Physics Teacher,* vol. 8, no. 8, 1970.

Contains a large section on radioactive dating. A detailed, very readable account. [Also suggested for Unit 301.]

U.S. Department of Health, Education and Welfare, Public Health Service. Booklets entitled *The Sources of Air Pollution and Their Control* and *The Effects of Air Pollution.*

Very useful for Option 4 of *Digging Up Evidence.*

Wong, H. K. and Dolmatz, M. J. *Biology.* Prentice-Hall, Englewood Cliffs, New Jersey, 1971, pp. 77-84.

Provides clear diagrammatic instructions on making casts and moulds by using clay and soap solution. Evolution of the horse discussed in simple terms.

UNIT 204 FOODS

For Teachers

Mariella, R. P. and Blau, R. A. *Chemistry of Life Processes.* Harcourt, Brace and World, New York, 1963.

For Students

Best, C. H. and Taylor, N. B. *The Living Body: A Text in Human Physiology.* 4th ed. Chapman and Hall, London, 1969.

Corden, M. and Thomas, S. *Simplified Food Composition Tables.* Commonwealth Department of Health, Nutrition Section, Canberra, 1971.

Dubos, R. and Pines, M. *Health and Disease.* Time-Life International, New York, 1966.

Durnin, J. V. G. A. and Passmore, R. *Energy, Work and Leisure.* Heinemann Educational, London, 1967.

Fleck, H. and Munves, E. *Introduction to Nutrition.* Macmillan, New York, 1967.

Fox, B. A. and Cameron, A. G. *Food Science; a Chemical Approach.* 2nd ed. University of London Press, 1971.

Lowenberg, M. E. [and others] *Food and Man.* Wiley, New York, 1968.

Mackean, D. G. *Food Tests.* Teacher's ed. John Murray, London, 1971.

Marks, H. *Nutrition and Elementary Food Science.* Jacaranda, Brisbane, 1967.

McCloy, J. (ed.) *The Science of Man.* No. 1, British Broadcasting Corporation, London, 1963.

Sebrell, W. H. and Haggerty, T. J. *Food and Nutrition.* Time-Life International, New York, 1968.

UNIT 205 LIFE IN FRESHWATER

For Teachers

Arvill, R. *Man and Environment.* Penguin, Ringwood, Victoria, 1967.

A report on air and water pollution in Britain. Provides interesting background reading.

Australia. Senate Select Committee on Water Pollution *Water Pollution in Australia* (report). Commonwealth Government Printing Office, Canberra, 1970.

Describes the nature, types, problems, and extent of water pollution in Australia and its control.

[Also suggested for Units 115 and 309.]

Besley, M. and Meyer, G. *Field Work in Animal Biology.* Angus and Robertson, Sydney, 1962.

Useful for excursions to freshwater streams. Contains diagrams and brief descriptions of animals. Also suggests an excursion to a marine platform, an estuarine flat and assignments for field work in the garden.

Hammersley, A., Jones, E., Perry, G. A. *Approaches to Environmental Studies.* Blandford, London, 1968.

Although written for English conditions, there are many useful excursion techniques.

[Also suggested for Unit 112.]

Macan, T. *A Guide to Freshwater Invertebrate Animals.* Longmans, Green, London, 1966.

Contains keys and illustrations of protozoa, molluscs, worms and arthropods.

Needham, J. G. [and others] *Culture Methods for Invertebrate Animals.* Dover, New York, 1959.

Very useful for establishing cultures of protozoa, worms, insects, snails, crustaceans, etc.

Stoker, H. S. and Seager, S. L. *Environmental Chemistry: Air and Water Pollution.* Scott Foresman, Glenview, Illinois, 1972, chapter 8, pp. 90-118.

For Students

Allsop, K. *Fit to Live In.* Penguin, Harmondsworth, Middlesex, 1970 (Connexions).

Shows what is happening to the environment, what the value of our environment is, and what man must do to improve the situation.

Andrews, W. A. (ed.) *A Guide to the Study of Environmental Pollution.* Prentice-Hall, Scarborough, Ontario, 1972.

[Also suggested for Unit 213.]

Andrews, W. A. (ed.) *A Guide to the Study of Freshwater Ecology.* Prentice-Hall, Engelwood Cliffs, New Jersey, 1972.

Both Andrews' books contain many detailed investigations for students. Many are quantitative and require skilled use of materials and chemicals.

Bailey, I. *Inland Waters and Their Ecology.* Longman, Melbourne, 1973.

Bell, A. *Common Australian Birds.* Oxford University Press, Melbourne, 1970.
[Also used in Unit 302.]

Child, J. *Australian Pond and Stream Life.* Cheshire-Lansdowne, Melbourne, 1968 (Periwinkle Books).
Useful for identification of organisms. Consists mainly of information on freshwater animals, classification and illustrations.

Darling, L. *A Place in the Sun.* World's Work, London, 1968.
A general background book on systems and cycles, balance of nature, pollution and its effect on ecosystems.

Fisher, D. L. *Practical Studies in Pollution.* Heinemann, Melbourne, 1973.

Jones, E. *The World of Water.* Blandford, London, 1969, (Approaches to Environmental Studies, Book 2).
Published for use with the Nuffield Foundation 'Resources for Learning' Project.

Macdonald First Library. *Frogs and Toads.* Macdonald Educational, London, 1970.
Very simple descriptions of frogs and their life cycle, and toads, newts, salamanders, and axolotls.

Macdonald Junior Reference Library. *Insects (vol. 2). Fishes (vol. 21). Animals with Shells (vol. 45). Fishing (vol. 54).* Macdonald Educational, London, 1969.

Stephenson, W. *Places for Living.* Angus and Robertson, Sydney, 1970.
Contains a 19-page section on freshwater organisms, running and standing water environments.
[Also suggested for Unit 112.]

Weatherley, A. H. (ed.) *Australian Inland Waters and their Fauna.* Australian National University Press, Canberra, 1967.

Wentworth, D. F., Couchman, J. K., MacBean, J. C., and Stecher, A. *Pollution: Cramming Your Environment.* Holt, Rinehart and Winston, Toronto, 1971.
Well-illustrated; contains activities that junior secondary school students could handle easily.

White, D. C. and Elliot, C. S. *Man, the Earth and Tomorrow.* Cassell, Melbourne, 1969.
An introduction to the conservation and use of Australia's natural resources.
[Also suggested for Unit 112.]

Whitley, G. *Freshwater Fishes of Australia.* Jacaranda, Melbourne, 1964.
Useful for identification. Gives illustrations, general notes, distinguishing features, colours and sizes of fish.

Williams, W. D. *Australian Freshwater Life; the Invertebrates of Australian Inland Waters.* Sun Books, Melbourne, 1968.
Useful for identification. Contains detailed keys and illustrations.

UNIT 206 LIGHT FORMS IMAGES

For Teachers

Austin, R. H. *Star Chart for Southern Observers; Chart C8.* Wiley, Sydney, 1968.

Gluck, I. D. *Optics.* Holt, Rinehart and Winston, New York, 1964.

Discusses the nature and applications of light in simple terms.

Gregory, R. L. *Eye and Brain.* Weidenfeld and Nicolson, London, 1966 (World University Library).

A useful easy-to-read book on the psychology of seeing.
[Also suggested for Unit 114.]

Harvard Project Physics. *Motion in the Heavens; Text* and *Handbook 2* and *Reader 2.* Holt, Rinehart and Winston, New York, 1968.

Books contain several excellent passages with human interest angle.

McWilliam, H. R. *Observing the Southern Sky.* Hill of Content, Melbourne, 1969.

A visual-aids wallet containing charts, etc.

Menzell, D. *A Field Guide to Stars and Planets.* Collins, London, 1966.

A good text on observing.

Muirden, J. *Astronomy with Binoculars.* Faber, London, 1963.

Navell, W. *The Australian Sky.* Jacaranda, Milton, Queensland, 1965.

An information pocket guide.

Norton and Inglis. *Northern Star Atlas.* Gall and Inglis, Edinburgh. [n.d.]

A basic astronomy text for observing.

Rudaux, L. and de Vaucouleurs, G. *The Larousse Encyclopedia of Astronomy.* Hamlyn, London, 1966.

A basic astronomy text for theory.

Wood, H. *The Southern Sky.* Angus and Robertson, Sydney, 1965.

For Students

Some entries in the following list are specific references for the options section of *Light Forms Images.* This is indicated at the end of an entry. All other entries complement the whole unit.

Bunker, C. *About Light.* Collins, London, 1969 (Javelin Series).

Simple, experimental treatment; very elementary.

Elementary Science Study. *The Faithful Eye of Robert Hooke.* McGraw-Hill, New York, 1967-68 (A Supplementary Science Reader).

For use with Option 5.

Foundations of Science. *The Rays of Light* and *The Unseen Spectrum.* Sampson Low and Marston, London, 1966.

A good reference that covers all essential material for this unit.

Freeman, M. and I. *Fun with Light.* Kaye and Ward, London, 1968.

An excellent, inexpensive book; well written and superbly illustrated.

Guillot, Rene. *Astronomy.* Whitman, Racine, Wisconsin, 1965.

Very readable for junior school.

Junior Secondary Science Project. *Earth's Neighbours in Space; Teacher's Guide* (Unit 2, green series) and *The Sky Throughout the Year; Teacher's Guide* (Unit 1, red series). Cheshire, Melbourne, 1967-69.

Llowarch, W. and Woolnough, B. E. *Using Light.* Longman, London, 1970 (Longman's Physics Topics).

Well written, well illustrated. Covers all essential material for this unit.

Mayall, R. M. *The Sky Observer's Guide.* Golden Press, New York, 1959 (A Golden Handbook).

Nuffield Foundation. *Pictures in Silver and Colour.* London, 1965. (A Chemistry Background Book).

Pictures in Silver complements Option 6 and *Colour* complements Option 5.

Nuffield Foundation. *Optical Instruments and Ray Diagrams.* London, 1968 (A Physics Classroom Guide).

Orr, M. A. *An Easy Guide to Southern Stars.* Gall and Inglis, Edinburgh. [n.d.]

A simple pocket guide.

Stars of the Southern Hemisphere. Rigby, Adelaide, 1968.

Inexpensive and useful for night-time observing.

Time-Life International. *Light and Vision.* New York, 1967 (Life Science Library).

[Also suggested for Unit 114.]

UNIT 207 MACHINES

For Teachers

Bryant, Lynwood. 'Rudolf Diesel and His Rational Engine'. In *Scientific American,* August 1969.

Reti, Ladeslas. 'Leonando on Bearings and Gears'. In *Scientific American,* vol. 224, no. 2, February 1971.

Tricker, R. A. R. and B. J. K. *The Science of Movement.* Mills and Boon, London, 1967.

[Also suggested for Unit 105.]

For Students

Burstal, A. F. *Simple Working Models of Historic Machines.* Edward Arnold, London, 1968.

James, Albert. *Moving on Land.* Schofield and Sims, Huddersfield, 1963.

James, Albert. *Moving Round and Round.* Schofield and Sims, Huddersfield, 1963.

O'Brien, R. *Machines.* New York, Time-Life International, 1969 (Life Science Library).

Owen, W. and Bowen, E. *Wheels.* New York, Time-Life International, 1967 (Life Science Library).

UNIT 208 MICROBES

For Teachers

Bryan, Bryan and Bryan. *Bacteriology.* Barnes and Noble, New York, 1962 (College Outline Series).

Ingold, C. T. *The Biology of Fungi.* Hutchinson, London, 1961.

Nichol, H. *Microbes by the Million.* Penguin, Harmondsworth, Middlesex, 1939. Out of print.

Nicol, H. *Microbes and Us.* Penguin, Harmondsworth, Middlesex, 1955.

Postgate, J. *Microbes and Man.* Penguin, Harmondsworth, Middlesex, 1968.

Simon, H. J. *Microbes and Men.* Scholastic Book Service, New York, 1963 (Vistas of Science Series).

The American Biology Teacher. August 1968.
A periodical with useful material and ideas.

For Students

Smith, D. E. *Our Environment: How We Adapt Ourselves to It.* Allyn and Bacon, Boston, 1964 (Our Environment Series).

Van Hooft, G. E. *Our Environment: How We Use and Control It.* Allyn and Bacon, Boston, 1960 (Our Environment Series).

UNIT 209 PETROLEUM

General References

Hartmann, H. F. [and others] *Nature in the Balance.* Heinemann Educational, Melbourne, 1972.
[Also suggested for Units 213, 310, and 311.]

Levorsen, A. I. *Geology of Petroleum.* W. H. Freeman, San Francisco, 1967.
A detailed teacher reference covering petroleum formation, migration, trapping, exploration and recovery.

Meadows, D. L. [and others] *The Limits to Growth.* Earth Island, London, 1972.
A thought-provoking prediction of the world's future—looks at energy reserves and the need for conservation.
[Also suggested for Units 109, 307, and 308.]

Nuffield Foundation. *Petroleum.* Longman, London, 1966 (A Chemistry Background Book).
An excellent background book for use with this unit—suitable for students.

'Oil from the Earth'. In *CIBA Review,* CIBA Ltd, Basle, Switzerland, 1967.
A good general coverage of the story of oil.

Pryde, L. T. *Environmental Chemistry.* Cummings, Menlo Park, California, 1973.
Deals largely with the U.S., but gives a balanced view.

Supplementary Material

Much supplementary material can be obtained from the oil companies and the

Petroleum Information Bureau (227 Collins Street, Melbourne, Victoria 3000). Further information on pollution and conservation may be obtained from the local INSPECT group or the Australian Conservation Foundation (206 Clarendon Street, East Melbourne, Victoria 3002).

Cosmetics in the School Laboratory. Written by John Gostelow, for Shell International Petroleum Company Ltd, Shell Centre, London SE1. (Through Shell Australia.)

Petroleum Gazette. Back copies available from the Petroleum Information Bureau.

Easy-to-read background material on all aspects of the petroleum industry—suitable for student use.

'Teaching Panels on Petroleum'. A set of 12 charts, with teacher notes. Prepared by Esso-BHP.

UNIT 210 SIGNALS WITHOUT WORDS

General References

Argyle, M. *The Psychology of Interpersonal Behaviour.* Penguin, Harmondsworth, Middlesex, 1967.

An informative reference for teachers. Covers much of the material mentioned in the unit.

Brun, T. *The International Dictionary of Sign Language.* Wolfe Publishing, London, 1969.

A history of hand signs; also their meanings and use by people in different countries and in different occupations. Interesting and informative.

Carthy, J. D. *Animal Behaviour.* Aldus Books, London, 1965.

A general book about animals, with many examples of animal signals. A very good student reference.
[Also suggested for Unit 114.]

Collias, N. E. *Animal Language.* Heath, Boston, 1964.

BSCS pamphlet 20. Detailed but wide-ranging study of animal behaviour and signals. Not for students.

Education Development Center. *Baboon Communication* and *The Chimpanzee.* Cambridge, Massachusetts, 1967.

Short, informative booklets. Useful for Option 4 of *Signals without Words.*

Fast, J. *Body Language.* Evans, New York, 1970.

The type-book on human body talk. Very readable.

Frauca, H. *Animal Behaviour.* Lansdowne, Melbourne, 1971 (Periwinkle Colour Series).

A fairly short book. Specifically Australian content.
[Also suggested for Units 107 and 302.]

Frings, H. and M. *Animal Communication.* Blaisdell, New York, 1964.

Mentions how to study communication and the use of signals for social co-operation.

Hass, H. *The Human Animal.* Hodder and Stoughton, London, 1970.

An interesting study of observations of various human races.

Haverson, P. *Signs and Symbols.* Penguin, Harmondsworth, Middlesex, 1972.

An attractive collection of information about conventional signs and symbols. A very good student reference.

Helfman, E. S. *Signs and Symbols Around the World.* Lothrep, Lee and Shepard, New York, 1967.

Contains hundreds of different signs and symbols.

Lawick-Goodall, J. *In the Shadow of Man.* Collins, London, 1971.

A personal account of the scientific study of chimpanzees in the wild. Very readable.

Lorenz, K. *King Solomon's Ring.* Methuen, London, 1964.

Non-technical discussion of the author's work as an ethologist. Very readable.

Selsam, M. E. *The Courtship of Animals.* Morrow, New York, 1964.

Introduction to the courtship signals of a large number of different animals. [Also suggested for Unit 107.]

Selsam, M. E. *The Language of Animals.* Morrow, New York, 1962.

A simple account of methods of study and the signals used by many different animals.

Victorian School for Deaf Children. *Aid to Communication with the Deaf.* Massina, Melbourne, 1972.

A 'dictionary' of signs for more than one thousand words.

Williams, L. *Man and Monkey.* Panther, London, 1969.

The story of a colony of woolly monkeys which were reared and observed in England.

UNIT 211 SKIN AND CLOTHES

For Teachers

Book of Life: The Marshall Cavendish Encyclopedia of the Human Mind and Body. Marshall Cavendish, London, 1970.

Reference to the index under such headings as 'skin', 'temperature control', 'sunburn' and 'sunlight' will reveal several useful articles.

Breathnach, A. S. *Melanin Pigmentation of the Skin.* Oxford University Press, London, 1971 (Oxford Biology Readers).

Broby-Johansen, R. *Body and Clothes; an Illustrated History of Costume.* Faber and Faber, London, 1968.

Choice (The Journal of the Australian Consumers' Association). Chippendale, New South Wales.

Contains articles on suntan preparations, deodorants, anti-perspirants, and fire-resistant clothing.

Davies, S. and Turner, J. C. 'Non-woven fabrics'. In *Science Journal,* vol. 5a, no. 1, July 1969.

Flanagan, K. F. *Health Education for Secondary Schools.* Jacaranda, Brisbane, 1969.

Flugel, J. C. *The Psychology of Clothes.* Hogarth, London, 1950.
Interesting suggestions on motives for wearing clothes.

Gatland, K. *Manned Space Craft.* Blandford, London, 1967.

Howell, F. Clark. *Early Man.* Time-Life International, New York, 1964 (Life Nature Library).
[Also suggested for Unit 312.]

Laver, James. *Modesty in Dress.* Heinemann, London, 1969.
Interesting suggestions on motives for wearing clothes.

Macdonald Junior Reference Library. *Textiles (vol. 32).* Macdonald Educational, London, 1969.

Marples, M. J. 'Life on the Human Skin'. In *Scientific American,* vol. 220, no. 1, January 1969.

Montagna, W. 'The Skin'. In *Scientific American,* vol. 212, no. 2, February 1965, offprint 1003.

Pierce, B. 'The Anthropology of Space Suits'. In *Insight,* no. 184, 25 August 1968.

Schneider, H. and N. *Heath Science Series.* Heath, Boston, 1961-1968.

For Students

Allright, E. D. *Human Biology.* 2nd ed. Edward Arnold, London, 1969.

Bronowski, J. (ed.) [and others] *Technology: Man Remakes His World.* Macdonald, London, 1963 (Macdonald Illustrated Library).

Gatland, K. *Manned Space Craft.* Blandford, London, 1967.

Howell, F. Clark. *Early Man.* Time-Life International, New York, 1969 (Life Young Readers Library).
[Also suggested for Unit 312.]

Huxley, J. *The Wonderful World of Evolution.* Macdonald, London, 1969.
[Also suggested for Unit 312.]

Macdonald Junior Reference Library. *Prehistoric Life (vol. 4).* Macdonald Educational, London, 1968.
[Also suggested for Unit 312.]

Macdonald Junior Reference Library. *Textiles (vol. 32).* Macdonald Educational, London, 1969.
[Also suggested for Unit 308.]

Moore, Ruth. *Evolution.* Time-Life International, New York, 1964 (Life Nature Library).
[Also suggested for Unit 312.]

Peters, M. *Your Looks.* Longman, London, 1963 (Modern Living Series).

Pierce, B. 'The Anthropology of Space Suits'. In *Insight,* no. 184, 25 August 1968.

Radcliff, J. D. 'I am Joe's Skin'. In *Readers Digest,* November 1972 (Reprints of this article can be obtained from the publisher.)

UNIT 212 STICKING TOGETHER

For Teachers

Abbot, D. and Andrew, R. S. *An Introduction to Chromatography.* 2nd ed. Longmans, London, 1970.

Contains many useful experimental details.

Joseph, A. [and others] *A Sourcebook for the Physical Sciences.* Harcourt, Brace and World, New York, 1961.

Contains simple experiments.

Rogers, E. M. *Physics for the Inquiring Mind.* Princeton University Press, Princeton, New Jersey, 1960, chapter 6.

For Students

Boys, C. V. *Soap Bubbles and the Forces Which Mould Them.* Heinemann, London, 1960.

Foundations of Science Library. *The Restlessness of Matter.* Sampson Low, Marston, London, 1966, chapters 5 and 6 (edited material from *Understanding Science*).

INSPECT. *Bad Luck, Dead Duck.* Dalton, Canberra, 1971. (The report of INSPECT for 1970.)

INSPECT. *What a Mess! Let's Confess.* Dalton, Canberra, 1972 (The report of INSPECT for 1971.)

Jaffe, B. *New World of Chemistry.* Silver Burdett, Morristown, New Jersey, 1959, chapter 38.

The Nuffield Foundation. *Detergents and Colloids.* Longmans/Penguin, London, 1968 (Chemistry Background Books).

Time-Life International. *Matter.* New York, 1965, chapter 4 (Life Science Library).

[Also suggested for Unit 201.]

UNIT 213 WEATHER

For Teachers

Andrews, William A. (ed.) *A Guide to the Study of Environmental Pollution.* Prentice-Hall, Scarborough, Ontario, 1972.

Covers air pollution in detail. Includes activities on air pollution.
[Also suggested for Unit 205.]

Battan, Louis J. *Cloud Physics and Cloud Seeding.* Heinemann, London, 1965.

Covers rain formation and rainmaking.

Battan, Louis J. *The Nature of Violent Storms.* Anchor Books, New York, 1961.

Deals with thunderstorms, tornadoes, tropical cyclones and cyclones, with particular reference to North America.

Bowen, David. *Britain's Weather, Its Working, Lore and Forecasting.* Newton Abbot, David and Charles, 1969.

Emphasis on Britain's weather but has very good sections on weather lore, weather and warfare, weather control and the effects of weather on man.

Bureau of Meteorology. *Annual Report.*

Gives the weather highlights of the year and also accounts of recent developments in meteorology in Australia.

Bureau of Meteorology. *Australian Co-operative Observers Guide.* Australian Government Publishing Service, Canberra, 1973.

A guide for volunteer weather observers. Instructions for using and caring for recording instruments and colour photos of cloud types are included.

Bureau of Meterology. *Manual of Meteorology.* Melbourne, 1966.

A very good reference book on meteorology.

Mason, B. J. *Clouds, Rain and Rainmaking.* Cambridge University Press, 1962.

Shields, A. J. *Australian Weather.* Jacaranda, Milton, Queensland, 1970.

A pocket book, giving a good basic coverage of weather, with particular reference to Australia.

Strahler, Arthur N. *The Earth Sciences.* John Weatherfield, Tokyo, 1968.

The atmosphere, air masses, fronts, storms and world climates dealt with in detail.

[Also suggested for Units 102, 116, 303, 309, and 310.]

Pamphlets

The following pamphlets published by the Bureau of Meteorology could provide useful background material. Teachers may obtain single copies free of charge by writing to the Regional Director of Meteorology in their State.

The Aneroid Barometer and How to Use It

Cyclones—Rare but Dangerous

Making the Most of Forecasts

Radar Keeps a Weather Watch

Use of Balloons and Hydrogen

Weather and Boating

World Meteorological Organization

For Students

Australian Bureau of Meteorology. *Clouds, Wind and the Weather.* Dunlop Australia Limited, Melbourne, 1971.

An inexpensive and useful booklet. A good selection of colour photos showing cloud types. Available from Science Teachers Association of Victoria Services, 56 Samada Street, North Clayton, Victoria 3168.

Couchman, J. K. [and others] *Mini-climates.* Holt, Rinehart and Winston, Toronto, 1971.

Contains simple investigations on temperature, light, moisture, wind and soil in a mini-climate.

Hammersley, Alan. *Weather and Life.* Blandford Press, London, 1968 (Approaches to Environmental Studies, Book 3).

Contains simple activities and gives procedures for recording weather conditions. Sections on weather lore and climatic conditions in the past.

[Also suggested for Unit 302.]

Hartmann, H. F. [and others] *Nature in the Balance.* Heinemann Educational Australia, Melbourne, 1972.

Covers some of the problems associated with world population and pollution (including air pollution) with particular reference to Australia.
[Also suggested for Units 209, 310, and 311.]

Keen, T. G. *Understanding Weather in Australia.* Rigby, 1971 (Rigby Instant Book, No. ER/92).

A useful and inexpensive booklet.

Macdonald Junior Reference Library. *Weather and Climate (vol. 9).* Macdonald Educational, London, 1968.

A simple reference book on weather. Information is listed alphabetically.

Marshall Cavendish Learning System. *World Weather and Climate.* Marshall Cavendish Books, London, 1969.

Useful for background reading.

Matchett, J. K. L. *Australian Weather and Climate.* Cheshire, Melbourne, 1969.

Contains a variety of fairly simple classroom activities. Suitable for lower ability students.

Time-Life International. *Weather.* New York, 1966 (Life Science Library).

Well illustrated book. Should help to promote student's interest in weather.

UNIT 301 AUSTRALIANS—PAST AND PRESENT

For Teachers

Beals, Ralph L. and Hoijer, Harry. *An Introduction to Anthropology.* Macmillan, New York, 1965.

Berndt, R. M. and C. H. *The World of the First Australians.* Ure Smith, Sydney, 1954.

A definitive text on the Aborigines for teachers and advanced students.

For Students

Some entries in the following list are specific references for the options section of *Australians—Past and Present.* This is indicated at the end of an entry. All other entries complement the whole unit.

Abbie, A. *The Origin of Australians.* Reed, Sydney, 1969.

A general text-book dealing with the Aborigines' past, present and future. Their physical characteristics, life, beliefs and customs are discussed.

'Archaeology Unlocks the Ancient World'. Educational Broadsheet 14 printed by the *The Australian.*

For use with Option 1.

Australian Aborigines. National Museum of Victoria, 1970.

An inexpensive booklet giving background account of traditional Aboriginal life. For use with Option 4.

Australian Aborigines. Department of Territories, Sydney, 1967.

An inexpensive book dealing with Aboriginal culture and Aborigines today. Good background for student and teacher.

Baglin, D. and Mullins, B. G. *Aboriginal Art of Australia.* Horwitz Educational Supplies Pty. Ltd., Sydney, 1971.

For use with Option 6.

Baglin, D. and Moore, D. E. *The Dark Australians.* A.N.Z. Book Co., Sydney, 1971.

Concise, with good photos. Deals with the past, present and future of the Aborigines.

Bark Painting. Education Pamphlet no. 5, National Museum of Victoria.

For use with Option 6.

Batty, J. D. *Namatjira, Wanderer Between Two Worlds.* Hodder and Stoughton, Sydney, 1963.

The story of artist Albert Namatjira. For use with Option 6.

Berndt, R. M. and C. H. *Australian Aboriginal Art.* Ure Smith, Sydney, 1964.

Excellent. Discusses various patterns and symbols used by the Aborigines. Also explains the myths depicted by paintings. For use with Option 6.

Berndt, R. M. and C. H. *The First Australians.* Ure Smith, Sydney, 1969 (Walkabout Pocketbooks).

A very good, concise general reference.

The Boomerang. Australian Museum Leaflet no. 48, June 1969.

Clark, M. T. *Pastor Doug; the Story of an Aboriginal Leader.* Lansdowne, Melbourne, 1965.

The life of Douglas Nichols, a sportsman, churchman and community leader. For use with Option 5.

Crawford, I. M. *The Art of the Wandjina.* Oxford University Press, London, 1968.

Well-illustrated book about Aboriginal cave paintings in the Kimberleys, Western Australia. For use with Option 6.

Edwards, R. *Aboriginal Bark Canoes.* Rigby, Adelaide, 1972.

A very good reference, relating the story of the bark canoe of the Murray Valley and the people it served. For use with Options 4 and 7.

Edwards, R. and Guerin, B. *Aboriginal Bark Paintings.* Rigby, Adelaide, 1969.

A very good inexpensive reference describing preparation of paints and barks, the reasons for the stylized nature of such paints, and the myths depicted by some paintings. In full colour. For use with Option 6.

Edwards, R. '[illegible] Art of the Lost Australian'. Supplement to *The Australian,* 13 April 1970.

Interesting account of a journey to central Australia and of the important rock art discoveries made. For use with Options 3 and 6.

Elkin, A. P. *The Aboriginal Australians.* Longman, Melbourne, 1967 (Australian Landmarks).

Elkin, A. P. *The Australian Aborigines.* Nelson Doubleday, Sydney, 1966 (Around Australia Program).

Illustrated with coloured maps.

Gould, R. A. *Yiwarra; Foragers of the Australian Desert.* Collins, Sydney, 1970.

Harney, W. E. *To Ayers Rock and Beyond.* Rigby, Adelaide, 1969.

Enjoyable reading about the Loritdja tribe, their country and cultural heritage. For use with Option 5.

Lambert, D. 'What the Ancient Pines Teach Us'. In *Reader's Digest,* April 1973.

An easy-to-read background introduction to tree-ring dating. For use with Option 1.

Lockwood, D. *I. The Aboriginal.* Rigby, 1972.

Winner of *The Advertiser* Adelaide Festival of Arts Award, 1962. An account of the meeting of Aboriginal and western cultures and the resulting conflicts and life story of Philip Roberts, an Aboriginal and a medical assistant in the Northern Territory.

McCarthy, F. D. *Australian Aboriginal Stone Implements.* Australian Museum.

For use with Option 7.

McCarthy, F. D. (ed.) *Australian Aboriginal Antiquities, Their Nature and Conservation.* Australian Institute of Aboriginal Studies, Canberra, 1970.

For use with Option 1.

Mountford, C. P. *Aboriginal Art.* Longmans, Melbourne, 1967 (The Arts in Australia Series).

For use with Option 6.

Mountford, C. P. *The Aborigines and Their Country.* Rigby, Adelaide, 1969. Out of print.

A pictorial background of the flora, fauna, Aboriginal people and their way of life.

Mountford, C. P. *Brown Men and Red Sand.* Angus and Robertson, Melbourne, 1964.

A study of Aborigines in central Australia, their culture and way of life.

Mountford, C. P. and Roberts, A. *The Dawn of Time: Australian Aboriginal Myths.* Rigby, Adelaide, 1969.

For use with Option 5.

Mountford, C. P. and Roberts, A. *The Dream Time: Australian Aboriginal Myths.* Rigby, Adelaide, 1965.

Mountford, C. P. and Roberts, A. *The First Sunrise: Australian Aboriginal Myths.* Rigby, Adelaide, 1971.

Both of the above books contain colour prints of paintings by Australian artist Ainslie Roberts accompanied by descriptions of Aboriginal myths. For use with Option 5.

Mulvaney, D. J. and Golson, J. *Aboriginal Man and Environment in Australia.* Australian National University, Canberra, 1971.

For use with Option 1.

Mulvaney, D. J. *Australian Aboriginal Prehistory.* Nelson, Melbourne, 1970.

Inexpensive. An ideal background resource book. For use with Options 1 and 3.

Mulvaney, D. J. (ed.) *Australian Archaeology: A Guide to Field Techniques. (Manual no. 4).* Australian Institute of Aboriginal Studies, Canberra, 1969.

An excellent reference containing a section on radio-carbon dating. For use with Option 1.

Mulvaney, D. J. *The Prehistory of Australia.* Thames and Hudson, London, 1969.

A complete chronological dating table is supplied. For use with Option 1.

Reed, A. W. *Illustrated Encyclopaedia of Aboriginal Life.* Reed, Sydney, 1969.

A background reference with more than 200 entries on Aboriginal topics.

Rock Art. Education Pamphlet no. 4, National Museum of Victoria.

For use with Option 6.

Spalding, I. *Answering Your Questions about Aborigines.* 4th. ed. Victorian Ministry of Aboriginal Affairs, 1969.

A booklet containing condensed background information about Aboriginal life and contemporary situations. Available from the Commonwealth Office of Aboriginal Affairs, the Ministry of Aboriginals Affairs, or the Aborigines Advancement League.

Seaborg, G. T. 'The Expanding Role of the Atom in the Humanities'. In *The Physics Teachers,* vol. 8, no. 8, November 1970, pp. 422-31.

Deals with most aspects of the use of radioactive decay as a means of dating objects. For use with Option 1.

Tindale, N. and George, B. *The Australian Aborigines.* Golden Press, Sydney, 1974.

Discusses Aborigines from prehistory to present. Has a bias toward the tri-hybrid theory of Aboriginal migration to Australia. Inexpensive.

U.S. Atomic Energy Commission. *Nuclear Clocks.* [n.d.]

This excellent background booklet can be obtained free of charge by writing to the USAEC, P.O. Box 62, Oak Ridge, Tennessee, USA 37830. Contains a wealth of supplementary material. For use with Option 1.

UNIT 302 THE AUSTRALIAN SCENE

For Teachers

Costin, A. B. and Frith, H. J. *Conservation.* Penguin, Melbourne, 1971.

CSIRO. *The Insects of Australia.* Melbourne University Press, 1970.

Martin, A. *Pollution and Conservation in Australia.* Lansdowne, Melbourne, 1971.

[Also suggested for Unit 309.]

Odum, E. P. *Fundamentals of Ecology.* Saunders, Washington, 1971. One of the most comprehensive ecology reference books.

Highly recommended.
[Also suggested for Unit 310.]

Stace, H. C. T. [and others] *A Handbook of Australian Soils.* Retlim, Glenside, South Australia, 1968.

[Also suggested for Unit 116.]

For Students

Some entries in the following list are specific references for the options section of *The Australian Scene.* This is indicated at the end of an entry. All other entries complement the whole unit.

Augee, M. L. and Ealey, E. H. 'Torpor in the Echidna; *Tachyglossus aculeatus*'. In *Journal of Mammalogy*, vol. 49, no. 3, 1968, pp. 446-54.

For use with Option 4.

Augee, M. L., Ealey, E. H. and Spencer, H. 'Biotelemetric Studies of Temperature Regulation and Torpor in the Echidna; *Tachyglossus aculeatus*'. In *Journal of Mammalogy*, vol. 51, no. 3, 1970, pp. 561 and 570.

For use with Option 4.

Bell, A. *Common Australian Birds*. Oxford University Press, Melbourne, 1969.

[Also suggested for Unit 205.]

Bennet, D. P. and Humphries, D. A. *Introduction to Field Biology*. Edward Arnold, London, 1965.

Carrington, R. *The Mammals*. Time-Life International, New York, 1965 (Life Nature Library).

For use with Option 2.

Cayley, N. *What Bird Is That?* Angus and Robertson, Sydney, 1971.

Chapman, G. *Common City Birds*. Lansdowne, Melbourne, 1969.

Child, J. *Australian Insects and Australian Spiders*. Lansdowne, Melbourne, 1970 (Periwinkle Colour Series).

Child, J. *Australian Rocks and Minerals*. Lansdowne, Melbourne, 1970 (Periwinkle Colour Series).

[Also suggested for Units 102 and 109.]

Davey, K. *Australian Marsupials*. Lansdowne, Melbourne, 1970 (Periwinkle Colour Series).

[Also suggested for Unit 107.]

Frauca, H. *Animal Behaviour*. Lansdowne, Melbourne, 1971 (Periwinkle Colour Series).

Specifically Australian content.
[Also suggested for Units 107 and 210.]

Hammersley, A. *Weather and Life*. Blandford, London, 1969 (Approaches to Environmental Studies, Book 3).

Hill, R. *Australian Birds*. Nelson, Melbourne, 1967.

Keast, A. *Some Bush Birds of Australia*. Jacaranda, Brisbane, 1965 (Jacaranda Pocket Guides).

Marlow, B. J. *Marsupials of Australia*. Jacaranda, Brisbane, 1965 (Jacaranda Pocket Guides).

Nuffield Foundation. *Keys to Small Organisms in Soil, Litter and Water Troughs*. Longmans Green, London, 1966.
[Also suggested for Unit 116.]

Nuffield Foundation. *Living Things in Action*. Longmans Green, London, 1966 (Nuffield Biology Text IV).

Phillips, E. A. *Field Ecology*. Heath, Boston, 1964 (Biological Sciences Curriculum Study).

Ride, W. D. L. *Native Mammals of Australia*. Oxford University Press, Melbourne, 1970.

[Also suggested for Unit 107.]

Riek, E. *Insects of Australia.* Jacaranda, Melbourne, 1970 (Jacaranda Pocket Guides).

Serventy, V. *A Continent in Danger.* Ure Smith, Sydney, 1970 (Walkabout Pocket Book).

[Also suggested for Unit 305.]

Starker, A. and Wolfe, T. O. 'Food Habits of Nesting Wedge-tailed Eagles; *Aquila Audax*, in South-Eastern Australia'. In *CSIRO Wildlife Research*, vol. 15, no. 1, December 1970.

Troughton, E. *Furred Animals of Australia.* Angus and Robertson, Sydney, 1962.

[Also suggested for Unit 107 and 108.]

Worrell, E. *Australian Wildlife Cards.* Angus and Robertson, Sydney, 1969.

For use with Option 2.

Zim, H. S. [and others] *Rocks and Minerals.* Golden Press, New York, 1957.

[Also suggested for Units 102, 109, 303, and 307.]

UNIT 303 THE EARTH

For Teachers

Australian Science Teachers Association Journal. vol. 15, no. 2, 1969.

Contains an extensive list of earth science resource materials.

Cailleux, A. *Anatomy of the Earth.* Weidenfeld and Nicholson, London, 1960.

A paperback containing chapters on the earth's interior, origin, mountain building and movement of continents. Well illustrated.

Calder, N. *Restless Earth.* Angus and Robertson, Sydney, 1972.

An excellent, easy-to-read book on many aspects of plate tectonics, including implications in terms of present-day world geography, location of mineral resources and other interesting features.

Larousse Encyclopedia of the Earth. 3rd. ed. Hamlyn, London, 1967.

A beautifully illustrated general reference book on all aspects of the earth sciences.

[Also suggested for Units 102 and 203.]

Longwell, C. R. [and others] *Physical Geology.* John Wiley, New York, 1969.

Scientific American, Resource Library. *Readings in the Earth Sciences.* Freeman, San Francisco, 1969.

Contains easy-to-read articles on all aspects of current research in the earth sciences: volcanoes, continental drift, the earth's magnetism.

Scientific American. vol. 221, no. 3, 1969.

A special issue devoted to articles on the oceans. Origin of the oceans and continental drifts are two subjects covered.

Strahler, A. N. *The Earth Sciences.* Harper and Row, New York, 1968.

Excellent general references on all aspects of the earth sciences.

[Also suggested for units 102, 116, 213, 309, and 310.]

Wilson, J. Tuzo. *Continents Adrift.* Readings from *Scientific American.* Freeman, San Francisco, 1970.

Theories of continental drift and plate tectonics.

For Students

Bisque, R. E. *Investigating the Earth.* Boston, Houghton Mifflin, 1968.

An excellent book on all aspects of the earth sciences including the interior of the Earth.

Brown, J. M. *Earth Science.* Silver Burdett, Morristown, New Jersey, 1970.

A beautifully illustrated, easy-to-read book on all aspects of the earth sciences. Contains chapters on volcanism, earthquakes, and the interior of the Earth.

Eysteinson, S *Surtsey.* Cassell, London, 1969.

A colourfully illustrated book describing the birth of a volcano.

Time-Life International. *The Mountains.* New York, 1963-65 (Life Nature Library).

A well illustrated easy-to-read book containing chapters on the birth and death of mountains and volcanoes.

Wyckoff, J. *The Story of Geology.* Golden Press, New York, 1960.

A book containing art work and photos which would appeal to students. It contains chapters on earthquakes, continental drift and polar wandering.

Zim, H. P. [and others] *Rocks and Minerals.* Golden Press, New York, 1957.

An easy-to-read, well illustrated paperback. Sections on igneous and metamorphic rocks.

[Also suggested for Units 102, 109, 302, and 307.]

UNIT 304 GENETICS

General References

Augenstein, L. *Come, Let Us Play God.* Harper and Row, New York, 1969.

Ethics and morality in medical technology—some of the problems and possible solutions.

Bulmer, M. G. *The Biology of Twinning in Man.* Clarendon Press, Oxford, 1970.

Very comprehensive. Graphic photos and drawings of Siamese twins could be upsetting to some students.

Carter, C. O. *Human Heredity.* Penguin, Harmondsworth, Middlesex, 1964.

A good treatment of the important topics. Includes a chapter on principles of heredity.

Cummins, H. and Midlo, C. *Finger Prints, Palms and Soles: An Introduction to Dermatoglyphics.* Dover, New York, 1961.

Interesting for those interested in dermatoglyphics.

Darlington, C. D. *Genetics and Man.* Penguin, Harmondsworth, Middlesex, 1966.

Largely historical account of the emergence of genetics and its importance in the social context. Somewhat dogmatic.

de Beer, G. *Atlas of Evolution.* Methuen, London, 1964. Out of print.

An excellent, well illustrated account of physical evolution and its genetic basis. [Also suggested for Unit 312.]

Dunn, L. C. and Dobzhansky, T. *Heredity, Race and Society.* New American Library, New York, 1952.

Very readable.

Gedda, L. *Twins in History and Science.* Thomas, Springfield, Illinois, 1961.

A comprehensive and well illustrated book. Reading level is high.

Harrison, G. A. [and others] *Human Biology: an Introduction to Human Evolution, Variation and Growth.* Oxford University Press, London, 1964.

Includes details of anthropometric traits and a comprehensive treatment of human ecology. An atypical and therefore valuable reference source.

Holloway, P. W. *Genes and Chromosomes in Action.* Nelson, Melbourne, 1969.

Excellent publication, including glossary. Intended for use in Grades 11 and 12.

Huxley, J. *The Wonderful World of Evolution.* Macdonald, London, 1969.

Highly recommended. Well illustrated.
[Also suggested for Units 211 and 312.]

Jaroff, L. [and others] 'Man into Superman; the Promise and Peril of New Genetics'. In *Time,* vol. 87, no. 16, 19 April 1971, pp. 29-49.

A brief historical review of genetics, current research and future possibilities. Includes moral considerations of genetic engineering. Highly recommended for teachers.

King, R. C. *Genetics.* Oxford University Press, New York, 1965.

A very comprehensive treatise in the classical mould. Pitched at the undergraduate level. A good standard reference.

King, R. C. *A Dictionary of Genetics.* Oxford University Press, New York, 1968.

Includes a useful chronology.

Koller, P. C. *Chromosomes and Genes; the Biological Basis of Heredity.* Oliver and Boyd, Edinburgh, 1968.

A very wide but necessarily somewhat superficial coverage of the subject.

Lerner, L. M. *Heredity, Evolution and Society.* Freeman, San Francisco, 1968.

An excellent book which could be used as a basis of a matriculation course. Social considerations are thoroughly treated.

Mackean, D. G. *Introduction to Genetics.* Murray, London, 1968.

An up-to-date, well illustrated book; concerned more with chromosomes than with genetics per se.

Paterson, D. (ed.) *Genetic Engineering.* British Broadcasting Corporation, London, 1969.

Eight radio talks given by prominent geneticists.

Penrose, L. S. *Outline of Human Genetics.* 2nd ed. Heinemann, London, 1963.

A comprehensive treatment of the subject, including genetic principles. Illustrated.

Rorvik, D. M. 'You Can Choose Your Baby's Sex. In *Look,* vol. 34, no. 8, 21 April 1970, pp. 89-98.

The theory and practice of taking most of the uncertainty out of procreation.

Watson, J. D. *The Double Helix: a Personal Account of the Discovery of the Structure of DNA*. Weidenfeld and Nicolson, London, 1968.

Highly recommended. Printed in large type.

Young, J. Z. and Margerison, T. *From Molecule to Man*. Thames and Hudson, London, 1969. Out of print.

Genetics with a biochemical twist. Reading level is high, but excellent illustrations, diagrams and schematic models.

UNIT 305 HOW MANY PEOPLE?

General References

Australian Academy of Science. *Biological Science: The Web of Life (student manual 2)*. 2nd ed. Canberra, 1973.

Carson, R. *Silent Spring*. Houghton Mifflin, Boston, 1962.

Havemann, E. *Birth Control*. Time-Life International, New York, 1967.

Matches Make Models—A Documentation Booklet for Adults and Children. Brymay Publication. Distributed by Bryant and May Pty. Ltd., 560 Church Street, Richmond, Victoria 3121.

Parr, C. *Science Tapescripts: Science at Work (vol. 2)*. Methuen, London, 1970.

Scientific American, vol. 225, no. 1, July 1971.

Serventy, V. *Australia—a Continent in Danger*. Walkabout Pocketbook, Sydney, 1970.

[Also suggested for Unit 302.]

Wilson, M. G. A. *Population Geography*. Nelson, Melbourne, 1967.

UNIT 306 THE HUMAN MACHINE

General References

Australian Academy of Science. *Biological Science: The Web of Life*. Canberra, 1973.

Treats muscle physiological principles.
[Also suggested for units 101, 107, 112, 203, and 312.]

Bowerman, W. J. and Harris, W. E. *Jogging*. Grosset and Dunlop, New York, 1967.

Indicates value of jogging, how to do it, and examples of schedules.

Cooper, K. H. *The New Aerobics*. Evans, New York, 1970 (A Bantam Book).

Discusses fitness training methods.

de Vries, A. H. *Physiology of Exercise for Physical Education and Athletics*. Staples Press, London, 1967.

Contains recent research on the physiology of exercise in simple language. Very readable. Highly recommended.

Edholm, O. G. *The Biology of Work*. World University Library, London, 1967.

Layout of equipment and work space information.

Gray, J. *How Animals Move.* Pelican, London, 1959.

A simplistic, useful reference.

Moody, H. *The Human Machine.* Pyramid Books, New York, 1965 (The Worlds of Science).

Morgan, R. M. and Adamson, G. T. *Circuit Training.* Bell, London, 1957.

Examples of circuits and rationale.

Nourse, A. E. *The Body.* Time-Life International, Nederland, N.V., 1965.

Outstanding presentation. Refers to all systems of the body.

Nuffield Foundation. *Nuffield Biology (II Life and Living Processes* and *III The Maintenance of Life).* Longman, London, 1966.

Nuffield Foundation. *Nuffield Combined Science IV (Student Pack).* Longman, London, 1971.

Nuffield Foundation. *Nuffield Secondary Science:* Fox D. *Biology of Man (Theme 3),* Howard, E. *Harnessing Energy (Theme 4)* and Richardson, W. *Movement (Theme 6),* Longman, London, 1971.

Willee, A. W. *Dynamic Football.* Lansdowne, Melbourne, 1967.

UNIT 307 METALS

General References

Agricola, G. *De Re Metallica* (translated by H. C. and L. H. Hoover). Dover Publications, New York, 1950.

Aitchison, L. *A History of Metals* (2 volumes). Macdonald and Evans, London, 1960. Out of print.

Excellent general reference.

Alexander, W. and Street, A. *Metals in the Service of Man.* Penguin, Ringwood, Victoria, 1958.

Excellent general reference.
[Also suggested for Unit 109.]

Asimov, I. *A Short History of Chemistry.* Doubleday, New York, 1965.

Good for history of metals, alchemy and Periodic Table.

Brooks, A. *The Picture Book of Metals.* John Day, New York, 1972.

Discusses relation of metals to history. Each metal is seen as having its own 'personality'. Mining and determination of use according to properties are covered.

Brooks, H. *'Materials in a Steady State World'.* In *Metallurgical Transactions,* vol. 3, April 1972, pp. 759-68.

For teachers only.

Burnet, M. [and others] *Man and His Australian Environment.* Ormond, Melbourne, 1973.

A thought-provoking series of papers on Australia's environmental problems.

Coghill, I. *Australia's Mineral Wealth.* Sorrett, Melbourne, 1971.

A good cover of Australia's minerals. Excellent photos.
[Also suggested for Unit 109.]

Crawford, J. *Introducing Jewelry Making.* Batsford, London, 1972.

Excellent cover of jewellery-making techniques.

Evans, U. R. *An Introduction to Metallic Corrosion.* Edward Arnold, London, 1960.

Good background to corrosion. Probably too technical for students.

Friends of the Earth. *The Stockholm Conference: Only One Earth.* Earth Island, London, 1972.

Beautifully illustrated discussion on the world's environmental problems.

Garrett, A. B. *The Flash of Genius.* Van Nostrand, Princeton, New Jersey, 1963.

Pages 173-81 give good insight into Mendeleef's work. Probably too technical for students.

Gordon, J. E. *The New Science of Strong Materials, or Why You Don't Fall Through the Floor.* Penguin, Ringwood, Victoria, 1968.

Excellent general reference.

Institution of Metallurgists. *Corrosion and Protection of Metals.* Iliffe, London, 1965. Out of print.

Good background to corrosion. Probably too technical for students.

Landsberg, H. H. *Natural Resources for U.S. Growth: a Look Ahead to the Year 2000.* Johns Hopkins, Baltimore, 1965.

Provides interesting predictive graphs.

Macdonald Junior Reference Library. *Metals.* B.P.C., London, 1968.

An easy-to-read general reference. Covers extraction, properties and uses of metals.
[Also suggested for Unit 111.]

Maddox, J. 'Raw Materials and the Price Mechanism'. In *Nature*, vol. 236, 14 April 1972.

For teachers only.

Martin, J. W. *Elementary Science of Metals.* Wykeham, London, 1969.

For teachers only. A good introduction to metallurgy. Pages 82 and 83 cover bubble raft experiments.

Meadows, D. L. [and others] *The Limits to Growth.* Earth Island, London, 1972.

A thought-provoking prediction of the world's future.
[Also suggested for Units 109, 209, and 308.]

Murdoch, W. W. (ed.) *Environment, Resources, Pollution and Society.* Sinauer, Stamford, Connecticut, 1971.

A good general reference.

Neville, K. *The Craft of Enamelling.* Mills and Boon, London, 1968.

Covers enamelling and metal sculpture.

New South Wales Department of Mines. *Minerals and their Characteristics.* The Mining and Geological Museum, Sydney, 1973.

A good reference for mineral identification.

Nuffield Foundation. Chemistry background Books: *The Chemical Elements* (The Periodic Table, discovery of elements, alchemy). *Chemicals and Where They Come From.* (Minerals and metals.) *Corrosion.* (An excellent cover of

corrosion.) *The Discovery of the Inert Gases.* (Interesting background to Periodic Table.) *Metals and Alloys.* (Structure and properties of metals.) *The Periodic Table. The Structure of Substances.* (Comparison of metallic structure with others.) Longmans, London, 1971.

Parr, J. G. *Man, Metals and Modern Magic.* American Society of Metals, 1958.

Interesting background. History of metals and alchemy.

Raggatt, H. G. *Mountains of Ore.* Lansdowne, Melbourne, 1968. (A revised edition is in preparation.)

An excellent general reference on Australia's mineral industry.
[Also suggested for Unit 109.]

Scientific American Book. *Materials.* W. H. Freeman, San Francisco, 1967.

An excellent background book to metals, ceramics and plastics. Covers the history and future of metals. Probably too technical for students.

Shute, N. *No Highway.* Heinemann, London, 1964.

An interesting novel dealing with metal fatigue.

Smith, G. H. (ed.) *Conservation of Natural Resources.* John Wiley, Sydney, 1966. Out of print.

Very interesting presentation of the American point of view. Chapter 16, on conservation of mineral resources, is particularly interesting.

Swinkels, B. *Enamelling.* Rigby, Sydney, 1970.

A simple introduction to enamelling.

Talent, J. S. *Minerals, Rocks and Gems.* Jacaranda, Sydney, 1970.

A good handbook on minerals and prospecting.
[Also suggested for Unit 109.]

Tucker, A. *The Toxic Metals.* Earth Island, London, 1972.

Discusses the health risks, economics and politics involved in heavy-metal pollution.

University of New South Wales. Aylward and Mellor (eds.) *Background to Chemistry.* Conpress, Sydney, 1960.

Good background to study of Periodic Table.

Untracht, O. *Enameling on Metal.* Pitman, London, 1971.

Wide cover of enamelling techniques.

U.S. National Association of Corrosion Engineers. *Handbook of Corrosion Experiments.* (2400 West Loop South, Houston, Texas 77027).

Contains many interesting experiments on corrosion.

Winebrenner, D. K. *Jewelry Making as an Art Expression.* International Textbook, Scranton, Pennsylvania, 1964. Out of print.

An excellent cover of metal jewellery-making.

Zechlin, K. *Creative Enamelling and Jewelry Making.* Sterling, New York, 1970.

Good general introduction; simplified.

Zim, H. J. [and others] *Rocks and Minerals.* Golden Press, New York, 1957.

An interesting little book on minerals and what they look like.
[Also suggested for Units 102, 109, 302, and 303.]

Zimmermann, R. *Home-made Enamel Jewelry.* Herder, West Germany, 1967.
Good introduction to enamelling.

UNIT 308 POLYMERS

For Teachers

Couzens, E. G. and Yarsley, V. E. *Plastics in the Modern World.* Penguin, Harmondsworth, Middlesex, 1968.
Contains useful glossary of trade names.

Finlay, H. S. *Experiments in Polymer Chemistry.* Shell International, London. [n.d.]

Griffith, R. E., Potter, M. D. and Corbman, B. P. *Fibre to Fabric.* McGraw-Hill, Sydney, 1967 (Australian edition).

ICI, Plastics Division. *The Use of Plastics in School Laboratories and Craftrooms* (Schools Publication 1). *Thermoplastics in School Craftwork* (Schools Publication 3). *Polymers and Plastics in School Science Laboratories* (Schools Publication 4). [n.d.]

Kaufman, M. *Giant Molecules: The Technology of Plastics, Fibres, and Rubber.* Aldus, London, 1968.

Meadows, D. H. *The Limits to Growth.* Earth Island, London, 1972.
Background for discussion of future uses of plastics.
[Also suggested for Units 109, 209, and 307.]

The Nuffield Foundation. *Chemistry: the Sample Scheme Stage III: a Course of Options.* Longmar /Penguin, London, 1967.

Puddephatt, R. F. *Investigations in Chemistry.* Melbourne, 1972.
Prepared for the Chemistry Standing Committee for the VUSEB. See Topic 2, Plastics and Polymers.

Raitt, J. G. *Modern Chemistry: Applied and Social Aspects.* Edward Arnold, London, 1966.

Robinson, J. *Practical Work with Modern Materials.* Edward Arnold, London, 1968.

Rogers, M. *Big Molecules.* Heinemann Educational, London, 1968 (Foreground Chemistry 2).

For Students

Clarke, P. J. *Plastics for Schools: Applied Polymer Science.* Allman, London, 1970.
Would be very useful in connection with craft.

Dunlop. *The Science of Rubber.* London, 1968.

Fibremakers Ltd. *Synthetic Fibres in Australia.* Melbourne, [n.d.]

Foundations of Science Library. *The Giant Molecules.* Sampson Low, Marston, London, 1966 (edited material from Understanding Science).

ICI. Plastics Division. *Identification of Plastics for Schools* (Schools Publication 2). London. [n.d.]

Macdonald Junior Reference Library. *Plastics* and *Textiles*. Macdonald Educational, London, 1969.

[*Textiles* also suggested for Unit 211.]

The Nuffield Foundation. *Man-made Fibres and Plastics*. Longman/Penguin, London, 1967 (Chemistry Background Books).

The Plastics Institute. *A First Look at Plastics*. London, 1967.

The Plastics Institute of Australia. *Plastics and the Environment*. Melbourne, 1972.

The Plastics Institute of Australia. *Plastics News*. Melbourne.

A monthly publication containing numerous reports on recent plastics applications. October 1972 issue is devoted to plastics packaging and the environment.

The Plastics Institute of Australia. *The Plastics Scene—Materials for a Changing World*. Melbourne, 1973.

Shell Chemicals. *About Plastics*. London. [n.d.]

Thornley, P., Gore, R. and Wright, R. *Assignments in Plastics Technology*. Giddings and Morris, Adelaide, 1970.

Written for use with craft classes.

Time-Life International. *Giant Molecules*. New York, 1967 (Life Science Library).

Extremely well illustrated.

White, I. B. *Investigating Science with Rubber Bands*. Addison-Wesley, Massachusetts, 1969.

Contains numerous simple student activities.

UNIT 309 SEASHORES

For Teachers

Australia. Senate Select Committee on Water Pollution. *Water Pollution in Australia*. Commonwealth Government Printing Office, Canberra, 1970.

A report on extent, causes, effects, methods of prevention, and control of water pollution in Australia.

[Also suggested for Units 115 and 205.]

Australian Conservation Foundation. *The Future of the Great Barrier Reef*. Melbourne, 1969 (Special Publication No. 3).

Bascome, Willard. *Waves and Beaches*. Doubleday, New York, 1964.

Excellent background on waves and beach formation.

Bird, E. C. F. *Coasts*. Australian National University Press, Canberra, 1968.

An introduction to coastal geomorphology, using Australian examples.

Dakin, William J. *Australian Seashores*. Angus and Robertson, Sydney, 1960.

An excellent standard text on Australian seashore ecology.

[Also suggested for Unit 112.]

Hoyt, John H. *Field Guide to Beaches*. Houghton Mifflin, Boston, 1971 (ISCP Pamphlet Series PS 7).

A useful booklet on action of waves on beaches. Many good suggestions for field work.

Martin, Angus. *Pollution and Conservation in Australia.* Lansdowne, Melbourne, 1971.

[Also suggested for Unit 302.]

Nuclear Research Foundation. *Science for High School Students (vols. 1 and 2).* University of Sydney, 1970.

Contains sections on the work of the sea, wave physics, adaptation of organisms, community organisation and life on marine rock platforms.

Nuffield Foundation. *Physics Guide to Experiments III.* Longmans/Penguin, London, 1967.

Detailed instructions on investigation of wave properties—using ripple tank.

Serventy, V. *Landforms of Australia.* Angus and Robertson, Sydney, 1967.

Contains excellent photos, with explanatory text of Australian coastal landforms.
[Also suggested for Unit 102.]

Strahler, Arthur N. *The Earth Sciences.* Harper and Row, New York, 1969.

An account of the behaviour of ocean waves.
[Also suggested for Units 102, 116, 213, 303, and 310.]

Strahler, Arthur N. *Physical Geography.* Wiley, New York, 1969.

A detailed account of landforms made by waves and currents.

Twidale, C. R. and Foale, M. F. *Landforms Illustrated.* Nelson, Melbourne, 1969.

Excellent photos, with explanatory text of Australian coastal landforms.
[Also suggested for Unit 102.]

Whitelock, Derek. *A Dirty Story.* Sun Books, Melbourne, 1971.

Chapter 3 describes the extent of water pollution in Australia.

For Students

Australian Conservation Foundation. *The Future of the Great Barrier Reef.* Melbourne, 1969 (Special Publication No. 3).

Bennett, Isobel. *The Great Barrier Reef.* Lansdowne, Melbourne, 1971.

Bennett, I. *On the Seashore.* Rigby, Adelaide, 1969.

Child, John. *Australian Seashore Life.* Cheshire-Lansdowne, Melbourne, 1968 (Periwinkle Colour Series).

A very useful student and teacher reference book for identification of seashore life.

Dakin, William J. *Australian Seashores.* Angus and Robertson, Sydney, 1960.

Text is probably too difficult for students, but there are excellent photos.
[Also suggested for Unit 112.]

Farb, P. *Ecology.* Time-Life International, New York (Life Nature Series).

Gould League of Victoria. *Birds of the Oceans, Bays and Beaches.* [n.d.]

Gould Leaguer Nature Study Guide: Coastal Sand Dunes, Seashore and Reef. [n.d.]

Haworth, F. M. *The Sea-shore.* University of London Press, 1963.

Excellent student reference book for identification of rocky seashore life.
[Also suggested for Unit 112.]

McKeon, G. Y. *Life on the Australian Seashore.* Jacaranda, Brisbane, 1966.
Good for identification of seashore life.

Smith, G. *A Guide to Sand Dune Plants of S.W. Australia.* Western Australia Naturalist Club (Hand-book no. 5). Out of print.

Stephenson, W. *Living Place and Living Space.* Angus and Robertson, Sydney, 1969.
An introduction to the principles of ecology.

Vevers, Gwynne. *Seashore Life in Colour.* Blandford, London, 1969.
Useful book for identification.

Zim, Herbet S. and Ingle, Lester. *Seashores.* Golden Press, New York, 1964.
A useful reference book on ecology of seashore organisms.

UNIT 310 SOLAR ENERGY

For Teachers

Abell, G. *Exploration of the Universe.* Brief ed. Holt, Rinehart and Winston, New York, 1969.
Useful for students doing extra research.

Daniels, F. *Direct Use of the Sun's Energy.* Colonial Press, Clinton, Massachusetts, 1964.
A standard reference in this particular field.

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